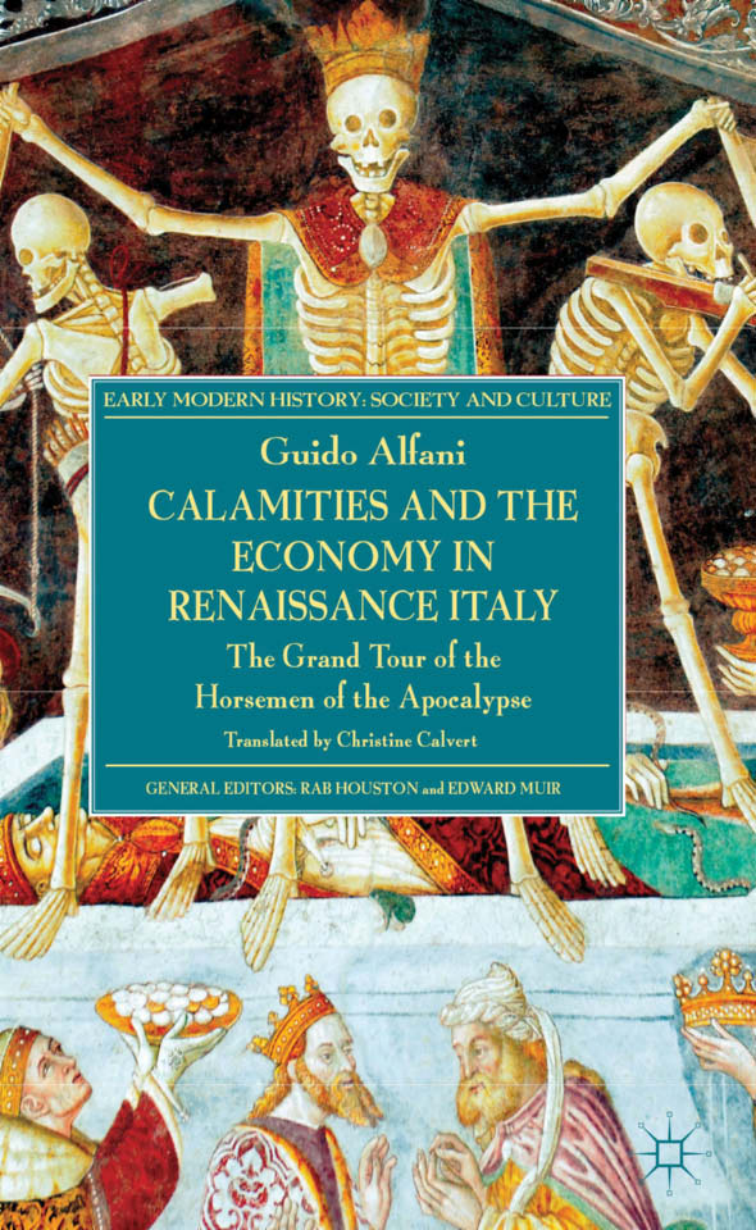




EARLY MODERN HISTORY: SOCIETY AND CULTURE

Guido Alfani
**CALAMITIES AND THE
ECONOMY IN
RENAISSANCE ITALY**

The Grand Tour of the
Horsemen of the Apocalypse

Translated by Christine Calvert

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The Grand Tour of the Horsemen of the Apocalypse

Guido Alfani

Associate Professor of Economic History, Bocconi University, Italy

Translated by
Christine Calvert

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For Elisa, with love

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Epigraph

Suddenly, between 1494 and 1538, the Horsemen of the Apocalypse descended upon Italy. The country became the battle-ground for an international conflict involving Spain, France, and what we would today call Germany. With the war came famines, epidemics, destruction of capital and disruption of trade.

[...]

The second half of the sixteenth century was the 'Indian summer' of the Italian economy. In that Indian summer, however, were sown the seeds of future difficulties. Reconstruction there was, but it was restoration of old structures, and recovery took place along traditional lines.

C. M. Cipolla, *Before the Industrial Revolution* (1993),
pp. 241 and 243

[...] we mustn't imagine a state of permanent horror: there were some pauses [in the war]; some relatively peaceful troop movements [...]. And in short the Italian Wars did not deeply undermine Italy's economic well-being. The Peninsula certainly suffered, but its suffering was diluted over a long time: depending on the period there were regions that were devastated while others were spared. What's more the enemy armies were not large; ten thousand men, sometimes fewer, on one side and the other: life did not come to a halt for this [...].

[...]

We therefore find an undeniable wealth in this Italy at the tail end of the sixteenth and the early seventeenth century. It is not surprising, therefore: the century of the Genoese, which is also that of the early Baroque, is the period of the greatest diffusion of Italian civilization.

F. Braudel, *Il secondo Rinascimento* (1986),
pp. 46 and 83 (our translation)

Introduction

This is a book on sixteenth-century Italy with six main protagonists. The first three are War, Famine and Plague. In the vision of St John the Evangelist on Patmos they appear as fearful horsemen all set to go on a rampage among men in the days leading up to the Day of Judgement. There is a fourth horseman, our fourth protagonist, Death. He always rides beside them, being one of their main consequences, and often, but not always, the most horrific.

The catastrophes that struck Italy in the sixteenth century are one of the main themes of this book. They are not, however, my reason for writing it. Catastrophes have serious demographic consequences, not only in terms of the number of deaths, but also in terms of the unborn and in the lasting turmoil caused in matrimonial strategies and in how generations succeed one another. Population, therefore, will be the fifth protagonist.

However, the study of the Italian population in the sixteenth century, while being in itself an ambitious project, is not my sole aim. As many readers already know or have guessed from the epigraph at the beginning of the book, I am not the first to evoke the Horsemen of the Apocalypse in order to describe the situation in which Italy found itself in the first decades of the Early Modern Age. In Italian historiography this metaphor has been used by Carlo M. Cipolla, who linked the arrival of the Horsemen to the 'invasions' at the time of the Italian Wars, which broke out in 1494 when Charles VIII of France claimed the Kingdom of Naples. Cipolla's main interest was the effects of War, Famine and Plague on the Economy, my sixth and last protagonist – the last, but certainly not the least important. As it is the most elusive and intractable, it is also perhaps as a result, the one that most appealed to me and the one that persuaded me to write this book in the way that I have written it.

Undoubtedly there are many ways of attempting to give an account of the general trends in the Italian economy, even in such a relatively distant century as the sixteenth. For several reasons that I will explain shortly the choice that I have made here is to start with the population. Cipolla himself, dealing with the deleterious effects of the Horsemen of the Apocalypse on the

Italian economy, mentioned the demographic factors that accompanied the 'destruction of capital' and the 'disruption of trade' (Cipolla, 1993: 241). What remains largely unsolved in his analysis is the problem of estimating the damages caused in the Peninsula during the Italian Wars both in terms of loss of life and in immediate and long-term economic costs. Merely to imagine how to attempt a calculation requires a knowledge and a detailed analysis of the various types of calamities, in other words it is necessary to focus our attention on War, Famine and Plague.

Why did Cipolla use such a vivid image to describe the Italian situation in the first part of the sixteenth century? In order to understand this it is necessary to recall briefly the unique characteristics of a century that would prove to be decisive for the whole of Europe.

The sixteenth century is a century of change. It is a period in which the old equilibriums, some of which had been tottering for some time, were being questioned, or more tellingly being violently questioned: modernity was born in blood. The tremendous increase in the range of action to include the new West (the Americas), shortly after the commercial expansion of the Portuguese towards the East, marks the final destruction of the shell in which Europe had been enclosed, and protected, at least since the times of the Roman Empire, and the setting up of an 'economy-world' without precedents.¹ The opening up of economic spheres is accompanied by a similar cultural opening, insofar as Europeans had never before found themselves so close to 'diversity',² with the possible exception of Alexander the Great's adventure in India, a terra incognita discovered where he had expected to find the very boundaries of the world.

Just as at the time of Alexander, Europeans realized that the world was far bigger, more varied and stranger than they had imagined. Unlike Alexander, however, they did not draw back, but forged ahead into a new space, and then included that new space in their own sphere of action and reshaped it, with the familiar, sad and largely unwelcome consequences for the populations that they found in their path (Livi Bacci, 2008).

The European nations were to benefit unequally from the acquisition of new territories. The Iberian kingdoms were the first to profit from it and, paradoxically, the control of the distant boundaries of the known world (the 'New' World) gave them an unprecedented central position in the 'Old' World. This change was favoured by a singular coincidence: shortly after Columbus' voyages, the young prince Charles of Habsburg inherited, successively, the throne of Spain, the Imperial Crown and the vast 'French' and Flemish territories of the ancient Duchy of Burgundy.³

The sixteenth century is also the century in which the religious equilibrium in Europe is called into question. Despite the break with the Orthodox world at the time of the Schism of the East (1054) – which proved impossible to heal, although repeated efforts had been made to do so – up until then Christians in Europe had not clashed over questions of faith and religious intolerance

had been aimed at 'others', Jews and Muslims *in primis*. However, the Hussite heresy, which had spread in Bohemia at the beginning of the fifteenth century and had been ferociously repressed, had shown the risks inherent in the loss of religious unity, risks mainly caused by the ability of religious innovation to overturn the political order. After Martin Luther nailed his 95 theses on the doors of All Saints Church in Wittenberg on 31 October 1517, many of the German princes did not hesitate to make the most of this opportunity to free themselves from the hegemony of the Holy Roman Empire, which, with the House of Habsburg, seemed to be gaining excessive power, certainly stifling ambitions of autonomy among the smaller states. The Protestant Reformation did not appear out of the blue, just as the so-called 'discovery' of America was the offspring of the Portuguese exploration in Africa and Asia.⁴ There were signs that change was in the air, such as the spiritual unrest of which Erasmus of Rotterdam is the best known exponent.

The breakdown of the religious equilibrium hastened and largely caused the breakdown of the social order. In the territories that supported the Reformation, old institutions like marriage lost their sacramental nature and became a private, secular matter, to be regulated by civil law. According to a common and a somewhat over-exploited interpretation, the theology of grace, especially in the way in which it was interpreted by Calvin, favoured the birth of a new work ethic: capitalism supposedly had finally discovered its 'spirit'.⁵ Catholicism, however, was not inactive. The Council of Trent (1545–63) helped to refashion social institutions in Catholic Europe. Sometimes the results produced by the Tridentine Reform were similar to those of the Reformation, as in the case of marriage,⁶ but in other cases it definitely distanced itself from the latter. It was not merely a matter of reformulating sacraments like penance and confession, which in their new forms proved essential for a project of a real 'conquest of souls' (De Boer, 2001), but it also dealt with only apparently less important issues, such as the reform of godparenthood with its unforeseen and unwanted consequences, which had effects – with economic as well as social importance – that only now are beginning to be evaluated and understood (Alfani, 2009a; Alfani and Gourdon, 2006, 2009, 2012a).

The profound change that characterized the sixteenth century, therefore, touched every sphere of life: political, economic, social, cultural and religious. Like every far-reaching change, in the end it benefited some and harmed others. What was Italy's fate?

Traditionally, historiography sees the sixteenth century as the moment in which the economic and sociocultural decline of the Peninsula begins, a decline that would deepen and become a real 'crisis' in the following century. Inspired by nationalistic trends, historians in the nineteenth century tended to underline the negative effects of the presence of foreign powers in Italy and the loss of formal independence in large areas (Lombardy and the south

in particular) and, in practice, throughout the whole of the Peninsula⁷ – a consequence of the Italian Wars that I will examine in the first chapter. This traditional view though proved long-lasting. It was passed on by important scholars like Benedetto Croce (1949), and influenced economic-social historiography until very recently (for instance, Luzzatto, 1955; Romano, 1971;⁸ Aymard, 1991). From this perspective the economic effects of the Italian Wars are to be attributed to two main factors: the destruction and looting connected with the wars themselves (factors to which we can add the increase in taxation⁹), and the shift of the centres of continental economy towards the north. If it is true that the seventeenth century was the century of the Dutch, then it goes without saying – this kind of reasoning seems to imply – that it could not also be the century of the Venetians.

Cipolla, also, when evoking the Horsemen of the Apocalypse, associated himself with those who before him had underlined the disastrous effect that the Italian Wars would have on the Italian economies. Not only was the Peninsula devastated by the first phase of the conflict (1494–1538), fought mainly on its territory by armies made up of ever-growing numbers of foreigners and that was also a harbinger of famines and epidemics, but when in the second part of the century (after the Peace of Cateau-Cambrésis in 1559) there was a solid recovery in economic activity, Cipolla claimed that it was merely an Indian summer, a fleeting flame destined to burn itself out quickly, as ‘in that Indian Summer [...] were sown the seeds of future difficulties. Reconstruction there was, but it was restoration of old structures, and recovery took place along traditional lines’ (Cipolla, 1993: 243).

When I began years ago to take an interest in these subjects, I was surprised to discover that it was possible to give a very different picture of the situation in the sixteenth century and the way in which the Peninsula appeared on the European scene at the end of that century. In particular, a great historian, Fernand Braudel, points out that the damage caused by the wars was limited: ‘the Italian Wars did not deeply affect the economic health of the peninsula. It certainly suffered, but its suffering was diluted over a long period: depending on the years, there were regions that were devastated and others spared’ (Braudel, 1986: 46, our translation). Hence, the Horsemen of the Apocalypse, although they tormented the Peninsula, did not strike a fatal blow. But not only that. If we reconsider the period that Cipolla calls ‘Indian summer’, this is Braudel’s description: ‘We find [...] an indisputable wealth in the Italy of the latter part of the sixteenth century, and the beginning of the seventeenth. No surprise, therefore: the century of the Genoese, which is also that of the early Baroque, is the period of the greatest diffusion of Italian civilisation’ (Braudel, 1986: 86, our translation).

Far from being two different ways of describing the same historical process, the descriptions that Cipolla and Braudel give of the sixteenth century seem to refer to different centuries, having in common only the chronology of that *histoire événementielle* (history as recollection of great events) that

certainly did not appear to be among the primary interests of the two historians. Their interpretations of the characteristics of Italy in this first century of the Modern era are so different as to seem irreconcilable.

Cipolla emphasizes the negative effects of the devastation that hit 'Italy' *tout court* in such a decisive and generalized manner as to cause not only a 'disruption of trade', but also a general breakdown in the economic system. Italy lost its drive while other countries accelerated ahead, but there was worse: the events of the first half of the century were one of the important reasons for a radical change in mentality. The reconstruction, claimed Cipolla, was a reconstruction of the old, without ideas or innovatory projects. The guilds strengthened their control over production but failed to keep up to date, while many merchants and entrepreneurs did not renew their businesses because they were looking elsewhere. The unproductive desire to ennoble themselves would lead them to invest in land instead of manufacturing activities, something that would lead to a decline in urban production and would send the Italian economies in a downward spiral.

Braudel, on the other hand, describes a situation in which the notorious catastrophes brought about by the Italian Wars appear to be considerably less catastrophic: they struck here and there, but with varying intensity and not everywhere. What's more, for some, these events were an opportunity to make their fortune, both on an individual level and on the level of the states they ruled. The 'princely courts of lucky soldiers' (Braudel 1986, p. 47, our translation) are examples. The recovery, when it took place, was real and sound.¹⁰

Two such different views have led me to look for an answer to this simple question: which of the two is more accurate? Is it possible to refer to new data, unavailable to Cipolla or Braudel or the other great historians who came before them, for a more accurate and systematic analysis of the Italian economic trend in the sixteenth century, thus going beyond a view based on local case studies, which refers almost exclusively to urban contexts? It seems to me that a positive answer to the second question is possible: I have identified, in fact, in data related to the movement of population a means of systematically comparing different areas in order to reconstruct an overall picture of the situation in the Peninsula throughout the century. For this I have created the largest database of demographic series in sixteenth-century Italy so far in existence, which will be my principal reference in this book. I will come back to this shortly.

In the passages quoted from Cipolla and Braudel, the dynamics of population and demography in general are not specifically mentioned. It is clear, however, that they are an essential aspect in their interpretation of the sixteenth century. Cipolla viewed the devastation as generalized: the Horsemen of the Apocalypse increased the distance between the curve of births and the curve of deaths, causing a clear-cut reduction in the population that would amount to a definitive description of the demography of

the first half of the century. This would have negative effects on the level of private demand (decreasing) and on that of wages (rising); in this way, the demographic damage was translated into an economic damage that was to be added to the 'direct' damage caused by the material destruction.¹¹

For Braudel, the action of Death, which always comes in the wake of Plague, War and Famine, was less severe but not only that: if the curves of all births and deaths in Italy are examined microscopically, we discover that the single components, if taken separately, give an account of different tendencies that are at times clearly divergent. Braudel also seems to take for granted that the demographic trend influences the economic one, a conviction clearly expressed by his former pupil Maurice Aymard, who actually suggested that population was at the time the decisive variable that stimulated or restricted growth.¹²

The demographic impact then like the economic impact of the Italian Wars is a historiographic puzzler. Even less clear are the relationships between the two fundamental macroeconomic variables, product and population. In fact, while here I propose to utilize the latter with the support of a mass of other information in order to indicate the general trend of the former, if we look a little more closely further questions immediately come to mind. The relationships between demography and economy have always been a source of uncertainties, and even economic theory has difficulty in conceptualizing the link between the two in a completely satisfactory way. Historiography has itself been guilty of a certain dilatoriness,¹³ and this book aims to help make up for this. For the purpose of this Introduction, it is sufficient to affirm unhesitatingly that if we intend to throw light on the economic trend starting from demographic dynamics then it is essential to clarify how population could influence variables like technological innovation, the level of demand and, finally, the product. Population theories therefore will often be mentioned in this volume, especially in the final chapters.

If we compare descriptions of the sixteenth century given by Cipolla and by Braudel, like the most recent one put forward by Paolo Malanima,¹⁴ it is clear that we are far from being confronted by a clear and widely shared historiographic reconstruction. However, paradoxically, the sixteenth century, as well as being 'the century of change' is also the 'forgotten century' (Alfani, 2003). Certainly it has been forgotten by historical demographers, to the point that one has the impression that the history of the Italian population can be related only from the seventeenth century – apart from the discovery of the existence of some stimulating scientific research dealing with the population in medieval times carried out by specialized historians of that period, with the result that the sixteenth century remains a parenthesis only partially explored. It seems to me that this tendency can be explained by a particular characteristic of sixteenth-century documentary evidence, with the appearance of some sources that are essential to a demographically oriented research like registers of baptisms and, in the last decades of the

century, also of marriages. However, other equally important documents are still missing: in particular the parish records of burials, only made compulsory by the *Rituale Romanum* introduced in 1614, and whose absence prevents the use of modelling methods and the techniques of analysis that are the standard ones for demographers today.¹⁵

Instead, it is more difficult to understand why economic historians have progressively lost interest in a century that continues to confront us with important historiographic challenges. With the exception of some recent initiatives (for example, Cattini and Bianchini, 2004), few seem interested in this field, a consequence it would appear of the fact that interest in the discipline has for several years shifted towards the close of the Modern Age and the contemporary era.

This book certainly cannot aim to provide an answer to all the unsolved problems of sixteenth-century historiography. What I propose to do is to follow a new path, which was inaccessible to earlier historians,¹⁶ one able to take us to a point from which looking at the century as a whole, it appears in a new light – and in some ways proves different from what had so far been imagined. In other words, my aim is not to conclude (and thus close down) a line of research, but rather to open it up and perhaps to stimulate new research on the population and economy of this neglected period.

On this path we will be accompanied by the characters presented at the beginning, starting with the Horsemen of the Apocalypse. I have chosen to dedicate the first chapter to War, not only so as to detail the human and material costs of the conflicts that involved Italy above all in the first decades of the century, but also to provide a political-institutional picture that acts as a frame of reference, helping us to get our bearings in often rather complex events. Famine and Plague (Chapters 2 and 3) follow War. The specific attention paid to each typology of calamitous events is due, on the one hand, to the conviction that only by starting from a profound knowledge of the demographic effects of these calamities in the first place, but also the social and cultural ones, is it possible fully to understand and gauge the economic effects. On the other hand, apart from war, once neglected but now object of a growing interest, these are areas of research where the loss of interest in recent decades is particularly clear. Italian economic historians have practically given up the study of the plague (like that of other epidemic diseases) and of famine in the Early Modern Age,¹⁷ followed – at least as far as the sixteenth century is concerned, and above all in the case of famine – by historical demographers. In some cases this has also meant a certain loss of contact with international scientific research, which has sometimes been stimulated by lively debates, for example regarding the identification of the pathogenic agent of the plague. It seems necessary therefore to evaluate the more recent literature and to highlight the existence of debates and unsolved problems as an essential premise in order then to proceed to an attempt at gauging the effects of the calamities.

'Calamity' and 'catastrophe' are words that keep recurring in this book. If we reflect on the second in particular, we note that it derives from the Greek for upheaval or overturning (καταστροφή), a word that etymologically includes the sense of 'fall', of a brusque downward movement (κατα-). In effect, the fall or the collapse in production and in population as a result of a calamitous or, more to the point, a catastrophic event is certainly a key to an understanding of its economic consequences. On a closer look, however, we are bound to see that this perspective, without doubt the most obvious and undeniably extremely important, is insufficient to understand all the implications of the calamities. So here an interpretation of the consequences of the catastrophes will be put forward that first of all also takes into consideration the qualitative aspect of the damage, both to the physical capital (what exactly was destroyed? where? who were the owners?) and to the human capital (who were the victims of the calamities? were some groups affected more than others? was the loss of skills more or less proportional to the loss of human life?). Second, the complex redistributive effects of the calamities on wealth, but also on population, will be analysed and it will be shown how from time to time they brought advantages and disadvantages to specific individuals, socio-professional groups, communities and states. Third, and finally, I will attempt a holistic approach to the study of catastrophes that offers an understanding of their economic and demographic consequences without neglecting social, cultural, psychological and behavioural aspects as well as institutional ones (institutions, in particular, will be taken as a fundamental analytic category insofar as they condition the development and consequences of the calamitous events and insofar as the most terrible crises always also appear as institutional failures). Altogether, the points listed above constitute a precise methodological proposal for the study of catastrophes, tested on a smaller and limited scale elsewhere (Alfani, 2010a, 2011b) and adopted here, for the first time, in a systematic way.

As well as being one of the fundamental lines of analysis used in the first three chapters, on account of its importance the subject of redistribution will be further studied in the second part of the book, which aims to provide an overall view of the consequences of the sixteenth-century calamities. In particular in the fourth chapter, dedicated to 'winners and losers', I will show that some Italian states were to profit, and considerably, from the 'foreign' wars fought in the Peninsula. Others, as is well known, ended up by paying the consequences of an excessive faith in their own might, but the misfortunes of a few must not be confused with the fate of a people that did not yet exist. In fact, 'Italy' at the time was little more than a geographical concept, and in my opinion traditional historiography has over-emphasized the collective destiny of the inhabitants of the Peninsula, forgetting that the states and mini-states that divided up the territory between them pursued their own objectives – primarily to survive – often in contrast with the interests of others: all the more so as many of the areas that were not politically

independent benefited from a fundamental strategic role, a herald of great opportunities, in the context of the Spanish Empire.

After clarification of the extremely variable way in which sixteenth-century calamities affected different parts of the Peninsula, the fifth and last chapter will put forward an overall interpretation of the underlying trends. Did the terrible events of the first decades of the sixteenth century drastically undermine the demographic and economic well-being of Italy? Or, as Braudel suggests, were their effects all in all limited? To provide an answer to this question, I will make a differential analysis of the demographic and economic dynamics in different environmental contexts (plain and mountain; large or small cities and towns; town or country; and so forth). This will make it possible to include in the picture factors like the level of urban development and the rate of urbanization, agricultural innovation and the transformation of the countryside. It will also enable us to consider in general and in reference to our particular case, the complex relationships between demographic dynamics, economic trends and technological change. As a conclusion to this differential analysis, I will present an overall reconstruction of population movement in northern Italy between the mid century and the eve of the plague in 1630, which will enable me to make a significant revision of the prevalent idea of the general macroeconomic trends in the Peninsula during the Early Modern Age. In the Conclusion, I will clarify the implications that this rereading presents for the interpretation, not only of the sixteenth century, but also of the seventeenth, traditionally regarded as a century of crisis (absolute or relative) for Italian economies.

Before continuing and making way for the Horsemen of the Apocalypse, it is opportune to give some minimum details of the sources used. In particular, as well as the mass of documents of various kinds used from time to time in support of the analysis, I will make a considerable use of the source that, because of its availability, best lends itself to systematic comparison: parish baptismal registers. The Council of Trent, which ended in 1563, established that parish priests were to be responsible for accurately recording in special registers the celebration of baptisms and marriages. However, the registers of baptisms are often available for periods preceding the Council (unfortunately, the same cannot be said for registers of marriages and burials), and sometimes they actually go back to the fourteenth century.¹⁸ Although Italian historical demographers are well aware of this,¹⁹ it is commonly thought that they refer to extremely sporadic cases, and that the oldest registers are seriously deficient, badly kept, damaged and difficult to understand. This is mainly a question of prejudice.

The Council of Trent in fact recognized and generalized practices already experimented with and for many years consolidated in many localities. The interest of local public authorities has been cited to explain the origin of these practices. They would have more or less delegated to religious institutions the task of registering who was baptized in the town, a necessary

requirement to acquire full citizenship (Corsini, 1974). However, at least in northern Italy, the diffusion of baptismal registers from the late fifteenth century cannot be explained by such a conjecture. Rather, their introduction was due to a desire to prevent 'spiritual incest' between those who were linked by relationships of godparenthood and spiritual kinship created by baptism (Alfani, 2003, 2009a). Consequently data for rural areas, which can then be included in this analysis, are also available.

To be brief, I will not dwell on the characteristics of these sources, whose importance for historical demography and economic-social history is well known. I will merely recall that in the centuries prior to the 'age of statistics' and the introduction of registry offices, the interest in series of baptisms largely lies in their being the best possible means of estimating a series of births.²⁰ For the purpose of the study of catastrophes then, series of baptisms, even more so than those of burials (far rarer in the sixteenth century), offer the possibility of a neutral and 'impartial' calculation of the short-, medium- and long-term consequences. In fact, unlike memoirs, chronicles, treatises and *resoconti lacrimevoli* (tearful tales) of various kinds (sources that tend to give a reading of the crisis conditioned by rhetorical and political objectives), the parish registers are simply lists of vital events affected by the calamities according to comparable and to a certain extent verifiable modalities – with the only risk, especially in the case of burials, of *underestimating* the importance of such calamities as a result of incomplete registrations.²¹ If then sources of a qualitative nature, like those mentioned above, are widely used, in the same way as sources from archives obtained for specific cases (for example, that of Ivrea for war and plague or that of Nonantola for famine) to throw light on otherwise invisible aspects of the crises created by the calamities, the demographic data systematically put together to guarantee a broad and compact coverage of the territory will not only be a fundamental link between the various parts of the analytic path proposed, but also a sure basis on which to build the most 'objective' evaluation possible of the gravity and the consequences of the catastrophes.

The research involved in creating an ample database was one of the main undertakings in the preparation of this book. After many years of work, the database today comprises for northern Italy 164 series of sixteenth-century baptisms, supplemented by 88 series of burials, a quantity of data that far exceeds that normally used for this purpose (for baptisms, the sample corresponds to 9 to 12 per cent of the overall population of the area²²). For central and southern Italy I have less systematic information, which is the reason why some of the sources presented here refer mainly to the north of the Peninsula. However, even in these cases, the analysis of a well-defined area will be the starting point to provide broader comparative perspectives in an attempt to give as complete a picture as possible of the case of Italy.

The period taken into consideration is the 'long sixteenth century' from 1494 – a date that is almost taken for granted, considering the symbolic and

material significance of Charles VIII's invasion of Italy in that year – to 1629, the eve of what is perhaps the most devastating plague to have struck Italy since the Black Death in the fourteenth century. We will witness the arrival in Italy in those years of the Horsemen of the Apocalypse, harbingers of death and devastation. However, as if struck by the beauty, the wealth and the good life in the lands in which they ventured, the Horsemen proved to be merciful and, rather than cutting down all of those who appeared in their path and destroying all of those whom they encountered, they made the most of the opportunity to make their *grand tour*. They visited almost every corner of Italy, although leaving it largely intact. But for this, which is one of my conclusions, it is necessary to wait a while.

1

War

For Italy the sixteenth century was certainly one spent under the sign of Mars. War had descended on the Peninsula at the end of the previous century and raged for many decades. Plague and Famine were quick to follow. Even though the interaction between the Horsemen was complex,¹ indisputably it was War that acted as a kind of link between the various types of calamitous events that tormented Italy during the first half of the sixteenth century. There is a belief among many historians and also among many chroniclers of the time that it was the passage of armies that caused the devastations that led to famine and that the troops were the carriers of contagious diseases, facilitating the spread of epidemics. This view seems essentially correct, although hardly sufficient to understand fully events whose complexity will be unravelled in the following chapters. Now though it is worth covering the main events of the wars, setting them in the intricate political, diplomatic and institutional context of the time in order to provide an essential frame of reference for the analyses that will be proposed later. It will also be an opportunity to appraise the economic-demographic consequences of the wars themselves, which are usually (but not always rightly) considered secondary to the famine and the epidemics associated with them.²

While demographers and economic historians rarely focused on the consequences of war, or at least of the wars of the medieval and Early Modern Age, many military historians have researched specifically and in considerable detail how the experience of warfare affected human communities. Especially from the 1970s onwards, adherents of the so-called 'New Military History' have analysed the impact of war on societies, have considered armies as social bodies, have investigated a wide range of relations between soldiers and civilians, and have studied the military as an important component of society and culture in general, and not only during wartime; an example is Joseph R. Hale's classic *War and Society in Renaissance Europe* (1985). However, while the New Military History intends to explore all the variety of ways in which the experience of warfare affected individuals and

society, it is also clear that the social (and, recently, cultural) aspects of war have been researched more thoroughly than its economic and demographic characteristics.³ This chapter then also provides a contribution to this literature by analysing in detail how war and the military affected the Italian economies, as well as the Italian societies.

The Italian Wars, 1494–1559: an overview of the main events

The so-called Italian Wars broke out in 1494 when Charles VIII of France invaded the Peninsula at the head of an army of 30,000 men to take possession of the Kingdom of Naples. It was the beginning of an extremely complicated period in Italian history, marked by wars, pillaging and violence that lasted, with a few interruptions, until the Peace of Cateau-Cambrésis of 1559. It was also the end of the period of (relative) peace and stability that had begun with the Peace of Lodi of 1454, a period characterized by the so-called *politica dell'equilibrio* or 'policy of the balance of power', which aimed at preventing any of the five major military and strategic powers of late medieval Italy (the Republic of Venice, the Duchy of Milan, the Republic of Florence, the Kingdom of Naples and the Papacy) from becoming too powerful and able to prevail over the others.

Traditional historiography holds that the outcome of the Italian Wars marked a fundamental change in the destinies of the Peninsula; the fact that the country did not unify impeded the establishment of state entities able to oppose effectively the increasing power of the great 'absolute' states of Western Europe. What followed was the loss of political independence, even for those states that managed to preserve at least a semblance of autonomy. The reduced room for manoeuvre conceded to Italian princes, together with exploitation by foreign powers, in time would cancel any remaining chance of economic recovery for the Peninsula, already in trouble because of growing foreign competition and because of the devastation that they had suffered during the wars (Pugliese, 1924; Pepe, 1952; Romano, 1971).

The most recent historiography has considerably modified this view, showing, for example, that far from operating according to a logic of blatant exploitation, foreign rulers treated their Italian territories with great consideration, without upsetting their forms of government or compromising their economic activities.⁴ Furthermore, the effectiveness of the foreign policy of the principal 'territorial' states enabled many of them to remain independent and enjoy an enviable, and almost uninterrupted, period of peace throughout the seventeenth century (Spagnoletti, 2003). The fact remains though that the sixteenth century is usually considered a period in which the Italian economy suffered some extremely serious setbacks; recovery in the second half of the century would be flawed and partial (Cipolla, 1993). However, even from a macroeconomic point of view, this negative opinion needs to be re-examined; this is the main aim of this book. For this purpose it is necessary

to evaluate not only the costs and damage, but also the benefits involved in the many catastrophic events that followed one after the other in the course of the century. The Italian Wars are the most appropriate starting point to sketch this picture.

The pretext for the appearance of the French in Italy was provided by the Angevin claim to the Kingdom of Naples, where Ferdinando I of Aragon had reigned since 1458. For some time the French Crown had identified the rich, but politically and militarily divided peninsula as the target of its eventual attempts at expansion. Dynastic claims, together with the declaration that it wished to make Naples the base for a crusade to combat Turkish expansionism, cloaked in legality an enterprise actually based on economic, strategic and political-diplomatic calculations. The death of Ferdinando I in January 1494, together with the (presumed) request for help made by the Duke of Milan, Ludovico Sforza, known as *il Moro* (The Moor) because of his dark complexion, supplied the pretext for military action. On 27 July, a powerful French army left Lyons and marched towards the Alpine passes. From then and until the final Peace of Cateau-Cambrésis in 1559, there were very few years of peace. Above all, in the first 35 years of conflict up until the Peace of the 'Due Dame' (1529), if there were any brief breaks, they were used only to build or consolidate alliances.

Initially, Charles VIII's campaign was extremely successful. The help of Ludovico il Moro and of his father-in-law Ercole I of Este, Duke of Ferrara, ensured the French an easy passage through the northern part of the Peninsula. Both Ludovico and Ercole expected help in strengthening their position against their Italian rivals, especially the Republic of Venice, but probably neither of them ever truly intended Charles VIII to acquire the Kingdom of Naples. The Italian allies then were disconcerted by the fact that the French king decided to lead personally into Italy an army whose size was, for that time, quite exceptional (see the next section). They were also taken aback by Charles VIII's extremely aggressive strategy, relentlessly pushing on, favouring speed of advancement to the detriment of a more diplomatic approach, and also resorting to considerable violence (including that done to civilians) in order to weaken his opponents' resoluteness – a strategy made possible by the overwhelming military supremacy that he enjoyed from the beginning of the campaign (Pellegrini, 2009: 26–8).

The army mustered by the Kingdom of Naples together with its allies, the Papacy and the Republic of Florence, proved totally unable to stop the French in the Po Valley. The alliance itself started to crumble when in October 1494, the French reached the border of the Republic of Florence, protected by the powerful fortress of Sarzana. The fortress could probably have resisted for a long time but, after Charles VIII showed his intention of making any opponent pay dearly by conquering and sacking the less protected town of Fivizzano and massacring its inhabitants, Piero de' Medici, the de facto ruler of Florence, made an agreement with him in which it was

stipulated that the French were to be given free transit through Tuscany. In addition, Piero surrendered a number of important fortresses, including Sarzana. The Medicis paid dearly for this move, which was meant to spare the Florentine domains from the devastations threatened by the French, as Piero's lack of resoluteness led to his ousting from power. Florence fell under the influence of the Dominican friar and religious reformer Girolamo Savonarola and Pisa rebelled against Florentine rule. The French were free to traverse Tuscany and to enter the Papacy; meanwhile they lost their ally Ludovico il Moro who, frightened by Charles VIII's unexpected success, withdrew to Lombardy with his followers.

Charles VIII found little resistance in the Papal States, where Pope Alexander VI faced a rebellion inside his capital, Rome, whose inhabitants were unwilling to endure a French siege. The Pope surrendered and gave the French free passage. Charles VIII swiftly entered into the Kingdom of Naples, where many cities and towns declared themselves for the French, acclaimed as liberators from the rule of the House of Aragon.⁵ The king Alfonso II abdicated in favour of his son Ferrandino (Ferrante II) and fled to Sicily. Also due to rebellion in the city of Capua and in Naples itself the new king proved unable to defend the capital and consequently, on 22 February 1495, Charles VIII was able to make his regal entrance into the city of Naples.

This extraordinary success was not destined to last long. The ease with which the French had defeated (often without even the need to fight) some of the greatest Italian powers, led the most powerful of all the Italian states, the Republic of Venice, to realize that its policy of neutrality had been unwise and ineffective, alienated the support of former allies such as the Duchy of Milan, and strengthened the resoluteness of humbled opponents such as the Papacy. Consequently, on 31 March 1495, the so-called Holy League was formed. This was an alliance of Italian states (the Papacy, the Republic of Venice, the Duchy of Milan), which, however, considering the impressive show of force performed by Charles VIII's army, to play it safe also sought the support of emerging European powers (Spain and England) interested in contrasting France's growing geopolitical influence. Charles VIII, afraid of being trapped in Italy, decided to return to France with one half of his army, leaving the other half in Naples to keep in check the growing resentfulness of the local population against the French arrogance, as well as Ferrante II's attempts at reconquering his kingdom with Spanish help. This time Charles VIII could not avoid military confrontation with the Italian army that was waiting for him to try and cross the Apennines. However, with the battle of Fornovo, in the territory of Parma, the French king broke the blockade set up by his adversaries and managed to take shelter beyond the Alps (see the next section).

The formation of the Holy League in 1495 is an important symbolic date, marking a turning point in Italian history as, from then on, the problems of the Italian states became part of a decidedly international scenario. In a

sense, the old policy of the balance of power was re-established, but the main European powers had become key players in the game, and they tended to have an increasingly more important role compared to the Italian states (Fueter, 1932; Pellegrini, 2009): France due to its claims on the Kingdom of Naples; Spain due to kinship ties with the Aragonese dynasty of Naples; and the Empire as Maximilian of Habsburg claimed the right to decide the destiny of the Duchy of Milan, formally an Imperial fief. This European involvement prevented any easy or quick solution to the Italian dynastic and diplomatic problems and resulted in an unusually intricate and harsh series of wars, which are impossible here to trace in detail. Only the first campaign (Charles VIII's) has been reconstructed with some precision to provide contextualization and as an example of the complexity of both the military events of the period and of the Italian diplomatic affairs. The developments of the rest of the Italian Wars will now be described only briefly, although specific episodes will be detailed in the following sections when they are relevant to the analysis of the economic, social and demographic consequences of war. In particular, it is important to distinguish the six phases into which the wars of 1494–1529 can be divided, marked by a continual shift in alliances:⁶

- 1 *1494–95*: Charles VIII's campaign, as detailed above.
- 2 *1499–1504*: The French return to Italy to conquer the Duchy of Milan, over which the new king Louis XII has dynastic claims.⁷ Between 1499 and 1500, the duchy changes hands on various occasions, despite the help given to Ludovico il Moro by Emperor Maximilian. The French and Spanish agree to divide between them the Kingdom of Naples, which is obliged to surrender (1501), and war breaks out between the two victorious nations over the division of the territory (1502–04). The Spanish prevail and gain control of the whole of southern Italy. In the meantime, Pope Alexander VI remains neutral in exchange for political and material backing for his son Cesare Borgia, who, between 1499 and 1503, conquers the Duchy of Urbino and much of Romagna, as far as Ravenna, greatly increasing the territories under Papal control.
- 3 *1508–09*: War against Venice; defeated at Agnadello by the Cambrai League (the Papacy, France, the Empire, the Duchy of Savoy, the Duchy of Ferrara and the Marquisate of Mantua), Venice avoids disaster by negotiating separate peace treaties.
- 4 *1510–16*: Pope Julius II is the instigator of a new anti-French Holy League (the Papacy, Spain, the Republic of Venice, the Swiss Confederation). Initially, the minor allies of France are attacked (the Duchy of Ferrara and the Earldom of Mirandola). After a period of fluctuating fortunes during which there are several changes of ruler in Milan and different alliances are formed, the French led by Francis I (who became king in 1515) defeat at Melegnano the Swiss troops defending Milan and remain in control of the duchy.

- 5 1521–25: Alliance of Charles V (who in 1519, had inherited the triple crowns of Spain, Austria and Burgundy and the Imperial Crown) with the Pope to drive the French (allies of the Republic of Venice) from the Duchy of Milan and from Genoa. Once again, the Duchy of Milan is conquered and lost on various occasions. The war ends only with the victory of the Imperial forces at Pavia (1525) and the capture of Francis I.
- 6 1526–29: The French form an alliance with the Papacy, the Republic of Venice, the Duchy of Milan and the Republic of Florence against the Empire; later they will be joined by Ferrara and Genoa. After an initial phase favourable to the League, which conquers numerous strongholds, Charles V once more gains the upper hand, also because Andrea Doria with the Genoese fleet abandons the French and goes over to Charles' side. Rome is sacked by the German Landsknechts (1527). France is forced to leave Italy. The advance of the Protestant Reformation and the growing Turkish threat to the Habsburg possessions in the Balkans convince Charles V of the need to seek peace. The territories of the Kingdom of Naples and the Duchy of Milan come under Spanish–Imperial control (1529).

The Peace of the 'Due Dame' ('Two Ladies'),⁸ signed in 1529, ended the first phase of the conflict, which up until then had been mainly fought in Italy. The six years that separated it from the renewal of hostilities represented the first significant truce. During the second phase of the conflict (1535–59), Italy ceased to be the principal theatre of war. The war between France and the Empire moved to Provence, northern France and the Low Countries; in Germany, it intertwined with the wars of religion following Charles V's unsuccessful attempt to oppose the Protestant Reformation. His final failure, ratified by the Peace of Augsburg in 1555, which marked the religious division of Germany, prompted him to abdicate in the same year and to divide his enormous territories, which had proved arduous to manage, between his son Philip, who received the Spanish Crown, the Low Countries and the rest of the Burgundy inheritance, the Duchy of Milan, the Kingdom of Naples and the possessions in the Americas, and his brother Maximilian, who was assigned the Habsburg inheritance, and prospectively the Imperial Crown, as well as the Kingdoms of Bohemia and Hungary that he already held.

This second phase of the war involved Italy, whose territories continued to be the principal *casus belli*, only occasionally and almost in passing. There was though a significant exception, the Duchy of Savoy, which then extended over a large part of Piedmont, including important cities like Turin (not yet its capital), Vercelli and Cuneo, but was still far from having completed its expansion *di qua dai monti* or 'on this side of the mountains'. In October 1535, on the death of Francesco, the last of the Sforzas, Francis I once again claimed the Duchy of Milan. However, instead of pushing forward into Lombardy, he confined himself to occupying almost all the territories of the Dukes of Savoy. Charles V reacted to the threat to his Italian

territories by taking the war directly into France (Menéndez Pidal, 1999). With this manoeuvre he forced the French to halt their advance and actually to withdraw from some of the strongholds already conquered in Piedmont (among them Ivrea, whose case I will return to later). Thus, right to the end of the conflict Piedmont remained an area of attrition among the principal European powers, periodically the site of clashes of varying importance⁹ and subject to considerable damage. It was only with the treaty of Cateau-Cambrésis in 1559 that the Duke of Savoy, Emanuele Filiberto (one of the principal Imperial generals, on active service – and not just by chance – in France and Flanders), was to regain his territories.

The complexity of the events of the wars and the number of players involved make it impossible here to follow each army during the numerous military campaigns and make a detailed estimate of the damage caused by each operation. I will limit myself, therefore, to proposing a general analysis of the consequences of the war in the first half of the sixteenth century, consequences closely linked to the characteristics of the military art of that time. Some of the ideas suggested here will be developed further in the following chapters.

Damage to human capital: battles and sieges

The damage caused by War (just like those caused by Famine and Plague) affected both material goods and people. In some instances, for example in a siege, physical capital was damaged as much as human capital; in others it was essentially men who felt the effects. This is especially the case in pitched battles, which with the introduction of artillery and firearms were becoming increasingly bloody. It was the Italian Wars, and in particular the Battle of Pavia, that demonstrated the effectiveness of combined squads of pikemen and harquebusiers against heavy cavalry and traditional infantry formations (Pieri, 1952; Sallmann, 1998; Del Negro, 2001; Barbero, 2003). Ritualized forms of medieval warfare – when pitched battles tended to be avoided as much as possible and when, if confrontation finally occurred, the main aim of the knights was not to eliminate the enemy but rather to gain personal glory (as well as booty and the capture of prisoners to be released on payment of a ransom; Settia, 2002) – were soon to be replaced by far more deadly modes of combat.

Actually, only a handful of the numerous battles of the period were characterized by heavy casualties (Figure 1.1 shows where the main ones were). The Battle of Fornovo, fought between the retreating French and a league of Italian states on the banks of the Taro River, was said by Guicciardini to be ‘memorable because it was the first, for a long time, to be fought in Italy with killing and with blood; because prior to this, very few men died in military action’. The victims amounted to ‘less than two hundred men’ on the French side and for the Italians to ‘more than three hundred men-at-arms and many



Figure 1.1 Main battles and sacks of cities during the Italian Wars (1494 political boundaries, simplified)

others that increased the number to three thousand men' (Guicciardini, 1561: 185–6, our translation). There were therefore about 3200 victims in the main battle of Charles VIII's campaign;¹⁰ later there were to be far bloodier clashes. According to Guicciardini, there were between 6000 and 9000 victims at Agnadello (1509), and at least 10,000 dead at Ravenna (1512). The Battle of Melegnano (1515) stands out as the bloodiest military action to take

place in Italy during the entire conflict. This was a 'battle not of men but of giants', according to Captain Giangiacomo Trivulzio, who in his old age drew a comparison between this and the eighteen earlier battles in which he had taken part, judging them 'children's fights' (Guicciardini, 1561: 1192). The estimate of the casualties, in this case particularly uncertain, can anyway be calculated at around 15,000 to 18,000.

At Pavia (1525), which proved to be a massacre for the French who emerged defeated and humiliated, their losses numbered 10,000 men, to which are to be added just a few hundred casualties among the Imperial forces (Bois, 2003: 21). The numbers correspond to those of the Battle of Ravenna, fought thirteen years earlier and which, even though to be taken as only indicative, given the variability of the estimates, seem proportionate to the increase in the number of combatants taking part as the conflict progressed (bearing in mind that in Fornovo, the dead were just about 3200). In the 1490s, an army judged to be 'large' numbered less than 20,000 men. At Fornovo, Charles VIII deployed 10,000 men against the 25,000 to 26,000 of the League (Mallett, 1983: 246; Fournel and Zancarini, 2003: 24). In the 1550s, when war raged in other parts of Europe, a large army was twice the size of a typical one at the end of the previous century (Cunningham and Grell, 2000: 95). The main Italian battles of the 1510s and 1520s show that a change was taking place. At Ravenna 25,000 French soldiers fought against 20,000 men of the Holy League (Fournel and Zancarini, 2003: 51);¹¹ at Pavia 28,000 Frenchmen fought against the same number of Imperial soldiers (Hale, 1985: 62).¹²

The increase in the size of the armies was undoubtedly one of the factors that contributed towards putting most of the Italian states out of the running, as by mid century they were no longer able, with the exception of the Duchy of Savoy, and above all the Republic of Venice,¹³ to face on the battlefield the troops of any of the great European states (or in the case of Venice, the Ottomans), unless as allies or auxiliaries of one of the continental powers. Moreover, not even the latter were always able to bear the expense of a kind of arms race that entailed a growing burden on public finances.¹⁴ Evidence for this is the Spanish Crown's repeated bankruptcies between the second half of the sixteenth century and the following century in 1557, 1575, 1596 and 1607 (Ulloa, 1977; Hale, 1985; Parker, 1995). Towards the end of the Thirty Years War (1618–48), the armies arrayed on the battlefield could be three or four times larger than those employed in the final phase of the Italian Wars, reaching 150,000 men (Cunningham and Grell, 2000: 95). Not only were these numbers unthinkable in Italy, unless in the context of a broad coalition (which would inevitably have been conditioned by the presence of the Spanish in the Peninsula), but they make it possible for us to realize that, while it is true that the conflicts in the first half of the sixteenth century were far bloodier than in the Middle Ages, they were relatively minor affairs if compared with those of the following centuries. As Fernand Braudel remarked, life does not come to a halt for a few thousand soldiers

(Braudel, 1986: 46). European commentators held that Italy was lucky to have been mostly spared the great wars of the first half of the seventeenth century. This is a factor to be kept in mind for a correct evaluation of the significance of the conflicts of the sixteenth century.

Many scholars stress the fact that the increase in the number of soldiers deployed could not have occurred had there not been a considerable population growth (Cunningham and Grell, 2000: 98). In fact, the progressive strengthening of states in northern Europe compared with those of the Mediterranean area is explained at least as much by their population growth as by their economic growth. Demography also helps to explain the increasing difficulties that Spain encountered in facing her numerous enemies and the centripetal forces of a heterogeneous empire (Pérez Moreda, 1980). The link between the increasing availability of men and the increase in the size of armies, with a consequent rise in the number of casualties in battles, inevitably calls to mind Malthus' theory that saw war as one of the 'positive checks' at work to redress an incipient imbalance between population and resources. I will have the opportunity to examine Malthusian theory in more detail later on, but here it is necessary to warn against a type of reasoning that, if not alien even to sixteenth-century thought,¹⁵ considers only the quantitative datum in evaluating the consequences of military action, that is to say *how many* lives were lost, while disregarding the fundamental importance of the qualitative aspect, meaning *who* perished during the battles of the Italian Wars. Usually it was the untrained soldiers, recruited for specific military campaigns and relatively easy to replace (and therefore expendable), and not the professional soldiers who represented the backbone of the infantry (the early nucleus of a standing army¹⁶), nor the heavy cavalry in which the flower of the nobility still served. Episodes like the death, in the Battle of Ravenna in 1512, of the young French general, Gaston de Foix, known as *Il fulmine d'Italia* (The Lightning of Italy) because he advocated a war of movement that disoriented his opponents, are to be attributed more to imprudence and thirst for glory than the normal circumstances of war, where, of course, misfortune could also strike the most expert, the most prudent and the best protected of men.¹⁷ This being said, in Guicciardini's account, Ravenna stands out as one of the rare battles in which the number of victims among the military elite of the *condottieri* (mercenary leaders), the captains and the noble officers was considerable (Guicciardini 1561: 999–1000). The best example of a similar distortion of events was undoubtedly Pavia, where not only the French sovereign, Francis I, was taken prisoner ('All is lost save honour,' as he wrote to his mother Luisa of Savoy from his prison), but many of the highest-ranking officers in the French army lost their lives: Admiral Bonnivet, La Trémoille and the Marshal of France, Jacques de Chabanne, Lord of La Palice, famous for having stayed alive ... until a quarter of an hour before his death¹⁸ (Guyon, 1664: 18–19).

Apart from these exceptions, those who died in the battles of the Italian Wars were mainly considered to be worth sacrificing; in fact, the losses in 'human capital' in pitched battles were relatively limited.¹⁹ Besides, as the conflict progressed the loss of Italian lives represented a decreasing proportion of the total loss, not only because the war was fought elsewhere in Europe, but also because the European powers who fought over the Peninsula increasingly resorted to their own conscripts or foreign mercenaries (Swiss or Landsknechts) in place of their treacherous Italian allies. Fornovo, where about 94 per cent of those who perished were Italian, is a very different case if compared to Melegnano where the main victims were the Swiss, who left between 8000 and 14,000 men on the battlefield, while among the opposing forces those who died were mainly French (Guicciardini, 1561: 1193). At the Battle of Pavia, according to Florange, of the approximately 55,000 combatants only 11,000 (20 per cent) were Italian, divided in almost equal numbers between the two sides (Florange, 1731, vol. 2: 241–2). Italy, increasingly the prey and less an active participant in the war, at least paid a lower price in terms of casualties.

Sieges were a different case, as the civilian population was inevitably involved as much as and sometimes more than the professional soldiers. As the enemy armies arrived (and often when friendly armies appeared, too), the rural population tried to seek refuge within the walls of the city, in pursuit of what could turn out to be a mere illusion of safety. Within the walls, obliged to live in overcrowded and unhygienic conditions, civilians were often victims of terrible epidemics. If the siege continued, then they risked hunger and found themselves forced to adopt extreme expedients. Finally, in the event of the city being taken by storm, they had to reckon with armies intent on plunder without sparing violence. Usually, but not always, cities that surrendered were spared this fate, or at least an effort was made to mitigate the consequences for the civil population.

According to Sebastian Schertlin, who was part of the Imperial garrison at Pavia during the 1524–25 siege (which ended in the famous battle), the living conditions of the soldiers deteriorated and, to survive, they had to live off horses, asses and dogs (cit. in Harari, 2004: 45). The Burgundian Fery de Guyon, one of the Prince of Orange's retinue, relates that during the siege of Naples in 1528, the French, led by Lautrec and well supplied with food and munitions, thought that they could force the Imperial garrison (to which Guyon belonged) to surrender from sheer hunger, without the need for bombardments or assaults. Despite the audacious night raids when the besieged pillaged the countryside over a radius of 20–30 miles, the rations of the common soldier were reduced to 'a tiny loaf [...] a day, black and badly made, because [...] water from the wells was rationed'. To avoid a deterioration in the situation, which would have destroyed the troops' will to fight, the Prince of Orange successfully attempted a sortie to break the siege (Guyon, 1664: 41–2). At Siena, during the siege of 1554, the bread

ration was first reduced to 20 ounces a day for the military personnel and 15 for civilians, then to 18 and 14 ounces, respectively, and finally to 14 and 10. Not expected to fight, the civilian population had merely to survive and so it was not essential to keep up their strength (de Monluc, 1592, vol. 2: 12–15, 71). If truth be told, these examples do not completely illustrate the dire situation that a siege could create (see Chapter 2). They are though typical of a situation of ‘normal’ hardship, which recurred during the course of the conflict, hardship that in the majority of cases involved civilians. In these circumstances a crucial distinction was made, one practised systematically in times of crisis, a distinction between those who were useful and those who were useless.

The tragedy of the ‘useless mouths’

The category of ‘usefulness’, to be understood mainly in terms of ‘economic usefulness’, set, however, in a specific sociocultural context, keeps recurring in medieval and Early Modern sources. Despite this, it remains a clearly under-explored category in international historiography, even though it is an extremely interesting angle from which to observe societies in the *Ancien Régime*. A quasi-juridical construct that in the late sixteenth century was to be specifically recognized in the regulations of many Italian cities, ‘usefulness’ emerges during the Italian Wars as a means of discriminating between those deserving protection and those who are expendable for the common good. As ‘useless’, their sacrifice essentially meant their expulsion to lighten the burden on food supplies. This is recurrent in times of siege. In Novara in 1495, the Duke of Orleans, besieged by the troops of Ludovico il Moro, decreed that the poor and useless be expelled from the city. Similarly, during the siege of Saint-Quentin (France) in 1557, the ‘useless mouths’ were turned out; in this case, they included children and the sick (Hale, 1985: 192).

In his memoirs, Blaise de Monluc, French governor of Siena during the siege of 1554, describes as follows the expulsion of the useless mouths, which he himself requested of the city council and subsequently carried out:

After my request [...] it was not easy to reach an agreement on the useless mouths as one person wanted to favour another, and they voted to appoint me as their dictator general for a month [...]. And I appointed six commissioners to draw up a list of the useless mouths and then I entrusted this list to a knight of St John of Malta, accompanied by 25 or 30 soldiers, in order to put them outside [the walls], which was done within three days of my entrusting them with the list. [...] I tell you that the list of the useless mouths amounted to 4,400 or more, and of all the wretchedness and devastation I have seen, I have never seen anything like it, nor do I hope to ever see it again. Masters had to abandon servants who had been with them for many a year, mistresses their maids, and a

world of poor people who had nothing but their manual work to live on; and the desolation and laments lasted for three days. These poor folk went out to meet the enemy, who pushed them back towards the city, and all the enemy camp were armed day and night [...] they drove them back right up to the walls, so that we would allow them back in, in order that the little bread left would be eaten more rapidly, and to see whether the city would rebel out of pity for their servants and maids but [the city] did nothing, and this lasted for eight days. [Those evicted] ate nothing but grass, and more than half died, as they were killed by the enemy and few survived. There were a great many young girls and beautiful women; these were permitted to pass, as at night the Spanish took some of them for their own pleasure but without the marquis's knowledge,²⁰ as their lives would have been at stake, and some strong and healthy men [were saved], who crossed the lines and escaped at night, but they were not even a quarter [of those expelled]; all the others died. These are the laws of war: often it is necessary to be cruel, to get the better of your enemy. You governors and captains, [...] don't be afraid of getting rid of useless mouths, be deaf to their cries. If I had been sure of my courage, I would have done it three months before; perhaps I would have saved the city. [...] I have regretted it a hundred times. (de Monluc, 1592, vol. 2: 72–4, our translation)

A precise economic calculation reflects such cruelty towards civilians, which Monluc, like many others, included among the demands of war.²¹ Faced with a shortage of food supplies and having established that it is impossible to feed the whole population (a situation that will recur, even in peacetime, during the great famines of the 1590s), the aim is to minimize the loss of human capital.²² In this, as in the management of plagues and famines, which will be dealt with later, the rulers (military and civilian) of the Italian cities in the Early Modern Age were truly 'precursors of Malthus' (Cipolla, 1988) or anyway, creators of a 'Malthusian policy of population' (Fasano Guarini, 1982: 82), adding, however, to the awareness that the excess population would inevitably die an element of rational calculation that probably would have troubled Malthus at least as much as our contemporaries. It is a kind of reasoning that deeply permeates the demographic policies of the cities and the Italian states in the Early Modern era (Fasano Guarini, 1982; Alfani 2009d), which tend to see as minor and, at best, temporary damage the expulsion of individuals lacking the necessary skills to sustain the urban economy, and even too easily and quickly replaceable after the crisis.

Who were these useless people? Certainly they could not merely be identified *a contrario*, according to Antonio Cornazzano's suggestion in 1476, as the population 'not useful to do things' that would have included the poor, the blind, women and children.²³ Nor was it simply the 'poor', an extremely complex category, whose various members benefited from differentiated treatment. In the first place, the idea of uselessness has to be linked

to that of citizenship, so we have useful citizens and useless citizens, and useful and useless non-citizens (*forestieri* or 'foreigners'²⁴). It includes also a hint of 'class': the wealthy master is considered more useful than his servant. It is to be interpreted then in the light of late medieval theological-moral doctrine, which explicitly condemned the practice of professions deemed useless to the civil community. So we read in the *Summa Confessorum* of Thomas of Chobham:

There are many activities that do not serve any purpose as far as the needs of the people are concerned. It is the case of those who make crowns of flowers, used only for human luxury, or those who make paintings without a meaning and useless dyes and decorations and many other things that are in no way useful to humankind. In fact, it should be noted that no profession and no work should be approved unless it meets a real need of human life. The Lord said: '*You shall gain your bread by the sweat of your brow*,' meaning you will not sweat, or rather you will do no work that does not serve to obtain bread and that which is not useful for your sustenance. (Thomas of Chobham, 1215, cit. in Todeschini, 2007: 214–15, our translation)

If it is true that the poor tended to do jobs that, on the basis of this definition, could be classified as useless if not actually contemptible (the perfect example of such uselessness is that of the professional beggar),²⁵ they were certainly not the only ones. It is difficult to imagine that the six commissioners chosen by Monluc at Siena were able to compile their list of 4400 useless mouths exclusively from the poor, considering that in 1553 the population of the city was approximately 25,000 inhabitants (Beloch, 1994: 282–3);²⁶ and, in fact, Monluc provides us with information about the eviction of the servants.

It is important then to understand how this selection related to the respect for citizens' rights, among which one of the main rights was protection from the external enemy. Generally speaking, citizens could not be expelled without urban functioning becoming utterly disorganized, unlike their servants who, while well integrated into the social structure as *famigli* (families) of a master, did not enjoy full rights. If in wartime some of the rights of citizenship could be, albeit illegally, suspended or ignored by the military authorities – who were, however, well aware of the risks of discontent within the defended community – in peacetime, and especially during a period of famine, the whole issue became juridically clearer: the point was to save the available resources for *those with rights* to them. These included, first, the citizens; second, those foreign incomers who, as they had resided for some time in the city and as they possessed a house there and were subject to taxes, enjoyed certain rights and made up a group of 'quasi-citizens' (Tedoldi, 2003; Barbot, 2007); and finally, those ethnic and religious minorities who

were unable to aspire to full citizenship, although they actually lived and owned possessions in the city on the basis of specific agreements reached with the municipality. In Italy, these were principally the Jewish communities, destined to remain extraneous to the *civitas*, able, however, to carry out functions deemed useful to the town that hosted them – primarily, supplying credit. It was no accident that the expulsions of the Jewish communities from Italian cities, which became more frequent during the sixteenth century, were sometimes justified by the fact that, since the Monte di Pietà banks had been established,²⁷ Jews were no longer useful. However, where these banks did not function adequately, the Jews' usefulness remained unchanged, and they could even be held by force when they tried to emigrate, for example in Ferrara in 1598, when a quarter of the Jewish community decided to follow the duke, Cesare d'Este, who had been compelled to transfer his court to Modena (Muzzarelli, 1996).

During a siege it is reasonable to think that some assessment of usefulness was made, keeping the needs of war in mind, for example, by retaining able-bodied men for conscription into militias or for fortification-building. It is also likely that this assessment would not be unconnected with that complex aggregate of social, cultural and legal factors that in normal times determined a precise perception of the various kinds of poverty,²⁸ infamy, foreignness and also uselessness (Todeschini, 2007), and that it would imply a calculation of the economic consequences of the expulsion in terms of the human capital lost or destroyed. In times of peace, the decision to carry out an expulsion in order to meet an unexpected crisis (usually a food shortage, but also an epidemic) followed the normal decision-making procedure. Ample documentation is available about this, so far insufficiently exploited. An exception is the case of Bologna at the turn of the sixteenth century, studied by Ottavia Niccoli, where the first to be banned from the city were to be the work-shy unemployed and foreign vagabonds. In practice, expulsion orders essentially involved those who could not justify their presence in the city on the basis of rights, that is, those who did not have citizenship, nor a house in Bologna, nor were part of the university of students; those who did not practise a profession worthy of the name, nor had a 'useful' activity, such as professional beggars and also, in some cases, travelling vendors; those who neither depended on nor were clients of an important member of Bolognese society or the student community (Niccoli, 2007).²⁹

Being useless in times of war as in times of peace was particularly risky for *forestieri* and, in general, for those who could claim no rights, or a precarious right given the circumstances, to remain within the shelter of the walls and of the institutions of the city. In extreme cases, like the siege of Siena, this situation also applied to servants and *clientes*. Many of them, and especially the 'foreign vagabonds', were also poor and so even more undesirable. The category of 'useless mouths', however, does not entirely coincide with that of the poor, some of whom had the right to protection. For example, in

Turin during the plague of 1598–99, the ‘shameful’ poor, whose situation was not their fault and who had a dwelling, were beneficiaries of public assistance in the city, while the other categories of the poor were expelled or at least moved outside the walls (Picco, 1983). The type and severity of the crisis determined the harshness of the expulsion order, the categories involved and the number of people who bore the brunt. I will come back to the expulsions in times of famine and plague, which are in effect a kind of ‘demographic panacea’ for the crises of the *Ancien Régime*, so much so that the useless mouths were the principal victims in the sequence of calamitous events that took place during the Italian Wars and also afterwards.

The sack of the cities

The privations endured during the sieges and the risk of being expelled and of losing their lives on account of the demands imposed in defending a city were not the only causes of suffering for the urban population. For centres involved in the Italian Wars, the worst possible fate was to be sacked by a conquering army. This was the destiny of many castles and fortified villages,³⁰ as well as several important cities. For example, Gaeta was sacked in 1495, Brescia in 1511, Ravenna and Prato in 1512, Voghera in 1513, Lodi in 1516, Como in 1521, Genoa in 1522, Rome in 1527, Pavia in 1528. Inevitably, pillaging and looting were accompanied by violence and massacres, which the officers of the conquering armies were not always able to curb. If during the sack of Prato, where 2000 unarmed citizens lost their lives, Cardinal Medici, who had taken the city, managed to save the women who had taken refuge in churches from the violence of his own army (Guicciardini, 1561: 1043), at Pavia the French, wanting to avenge their defeat of three years earlier, spared the city nothing. ‘The city was sacked, and for eight days the French showed great cruelty and set light to many fires, in memory of the rout in the park’³¹ (Guicciardini, 1561: 1795, our translation). Lautrec had ordered his men at least to respect the life and honour of nuns and children, but he was not obeyed (Hale, 1985: 195). While in other circumstances the massacres mainly affected that part of the population held to be easily replaceable (throughout the century, in fact, there was no lack of country folk anxious to settle in towns when cities were willing to welcome them), during a sack the killings tended to become indiscriminate: the craftsman risked losing his life as much as the servant, and often he ran an even greater risk as his shop offered an opportunity for looting. The wealthy or the merchants were more desirable prey than the poor and, even though they had the means to negotiate a more humane treatment, the fact that they were the primary target of the pillagers was a serious threat. Once the violence was over, the city could find itself deprived of skills and not just emptied of its inhabitants.³² The urban authorities then stepped in to promote the immigration of qualified labour, as also happened following a serious plague. I will come back to this.

The worst sack of all the Italian Wars and the one that most affected the consciences of its contemporaries (Cochrane, 1989) took place in 1527 in Rome, the centre of Catholicism, mainly at the hands of the German Lutheran Landsknechts, in no way inclined to respect the sacred places or the important prelates who were trapped in the city. Tommasino de' Bianchi, called Lancelotti, thus describes in his chronicle the effects of the sack:

And those who would compare Rome with what it had been when it was flourishing could not find peace. All the houses abandoned, deserted, full of human excrements and dead animals; mass is not celebrated, and shops are not open, only few; if one is sick, he dies of neglect because there are no doctors, nor medicines, nor eggs or poultry; great famine and illness, things unheard of since the beginning of the world; churches and monasteries abandoned, all the offices in ruins. (cit. in Corradi, 1973: 396, our translation)

As well as being the worst for the damage inflicted on people and things, the sack of Rome was also the most impressive for the value of the spoils. Guicciardini estimated it at more than a million ducats, 'including money, gold, silver and jewels', to which should be added a far bigger sum paid by private individuals as a ransom or as a *composizione* (settlement), this being an agreement to pay a sum so that a particular palace or house was spared the pillage. In this way, for example, 'The Marchioness of Mantua made a settlement for her palace of 52,000 ducats, that were paid by merchants and others who had taken refuge there' (Guicciardini, 1561: 1798, our translation). However, the guarantees offered by the conquerors were not always respected.³³ As Machiavelli (1521: 179, our translation) pointed out, 'the unarmed rich man is the reward of a poor soldier'.

It should not be imagined that a sack was simply the result of a violent explosion of men, carried away by the fighting, or that it was merely the effect of human greed. It was also a way of financing the war itself, a way of inducing an army to fight even when its pay could no longer be guaranteed. However, for reasons of strategic efficiency the shrewdest commanders tended to avoid it whenever possible, not only because for days at a time the troops refused to obey orders and dedicated themselves exclusively to pillaging and violence, but also because there was always a risk of mercenaries, replete with booty, going back to their home countries. This happened to Monluc in 1537, when in his absence the company of Gascons, whom he had recruited to fight in Italy, took the initiative and assaulted and sacked the city of Isle in the Albigeois, guilty of having closed the gates on them. The soldiers, laden with spoil, scattered and returned home without having made even a small part of the long journey towards the Peninsula (de Monluc, 1592, vol. 1: 129). Generally, a victorious army, which was given permission

to carry out a sack, risked losing through desertion at least the same number of men as the army that they had defeated (Harari, 2004: 53–4).

The long-term consequences of war: the case of Ivrea

I will come back shortly to the problems of financing a military campaign. Now it is worth giving at least one example of the possible long-term effects that the destruction suffered during a siege or a sack could have on urban economies. Our case is Ivrea, a small town in the north-west of Piedmont, whose population from the fifteenth to the seventeenth centuries fluctuated between 3000 and 5000 people (Alfani, 2010d). This important stronghold, which controlled access to the Aosta Valley and thus to the Alpine passes with Switzerland and France, was spared in the first part of the conflict (1494–1529), but when hostilities broke out once more, it had the singular misfortune of being attacked three times by French troops, in 1535, 1544 and 1554, and on the last two occasions was also besieged. The episodes of war, the repeated changes of hands, the destruction of part of the built-up area (both by the French and the Spanish, with the purpose of strengthening the fortifications) had a ruinous effect on living conditions and on the economic activities of the inhabitants.³⁴

In 1535, the city surrendered to the French, who were advancing to take possession of the Duchy of Milan. As will be recalled, Francis I had invaded Piedmont, meeting hardly any resistance, except that he then had to halt before even setting foot in Lombardy in order to check Charles V's advance in France. The French then withdrew from some of the Piedmontese strongholds that they had conquered, among them Ivrea, which consequently was occupied by the Spanish allies for many years.³⁵ In 1544, the French returned and assaulted the city, which, however, put up a strong resistance and forced them to withdraw. Nevertheless, following the siege, the Spanish governor Cristoforo Morales, who feared the return of the enemy and had observed how the French had taken shelter in the dwellings outside the walls, ordered the destruction of three densely populated suburbs, Bando, Pasquerio and Vicinasco, which were the heart of manufacturing in the town. In many of the buildings that were demolished, above all in Bando, woollen cloth had been made; because of this destruction, this kind of manufacturing almost completely disappeared from Ivrea (Benvenuti, 1976: 415).³⁶ There was also a notable decrease in the population because many, now homeless, moved elsewhere, sometimes for good. The destruction of the suburbs located outside the city walls, commonly carried out by troops defending a city, was normal practice at a time when artillery and handheld firearms began to play an essential role. It was not only a means of depriving the enemy of shelter close to the walls, but above all it guaranteed the defenders a clear line of vision and of fire onto the besiegers. For two to

four kilometres round the town, a zone of 'scorched earth' was created and everything was destroyed: houses, industries, mills and monasteries, as well as woods, orchards and vineyards. The material damage was enormous, far more than that caused by the rudimentary artillery in use at that time, and had legal and political-diplomatic consequences, which did not always result in some form of compensation for the city and its individual inhabitants (Hale, 1985: 192).

In 1554, the French, under Marshal Brissac, returned for the third time, surrounding and laying siege to the city. Morales, thinking that he would not be able to resist overwhelming forces, negotiated a surrender a few days after the arrival of the enemy when, having made a breach in the ancient walls that protected Ivrea on the side of the River Dora,³⁷ Brissac prepared to order the attack. Morales won the right to abandon the city with his garrison and at least saved Ivrea the scourge of a sack. According to the memoirs of François de Boyvin who took part in the brief siege, the only serious damage was that to the walls, and to repair them, moreover, Brissac immediately requested fresh funds from France. The occupation then was not particularly onerous for the population because the aim of the occupying forces was to win over the city; in fact, the treatment that they received encouraged Masino, Biella and other strongholds in the area of the Canavese to surrender (Boyvin, 1606: 148–50). This kind of behaviour was consistent with the policy of reconciliation adopted by the French in Piedmont from the 1530s, to the amazement of their contemporaries (Stumpo, 1986). In Ivrea in 1558, they limited themselves to knocking down some buildings inside the walls (among them the old monastery of Santo Stefano), in order to strengthen the weak fortifications on the banks of the river, increasing the already considerable amount of destruction. With the peace of Cateau-Cambrésis in 1559, the city became once more part of the Duchy of Savoy.

At the end of the war, Ivrea appeared profoundly altered. Whole built-up areas had been razed to the ground; some productive activities had been abandoned for good; many families, made homeless, moved elsewhere. Of the 5000 inhabitants present before the beginning of the war (already in 1377, the population was estimated at 5300, making Ivrea one of the most populated centres in Piedmont) in 1571, just 3031 remained (Beloch, 1994: 578). The more reliable sources available for the beginning of the seventeenth century show only partial recovery in the fifty years following the return to the government of the Savoy. The level of 4400 to 4500 inhabitants, reached once more at the beginning of the seventeenth century,³⁸ would once again be lost with the plague of 1630, and recovered only at the end of the century (Alfani, 2010d).

It is commonly thought that the voids dramatically created in urban populations by the great mortality crises typical of the *Ancien Régime* were easily and rapidly filled.³⁹ From a macro-demographic point of view, this is basically correct (Livi Bacci, 1978; Alfani and Gourdon, forthcoming) and a

rapid recovery was the common experience also in sixteenth-century Italy. However, what applies in general can prove wrong in a specific case. Ivrea is a first counter-example, the devastations suffered with the wars putting it on the road to a decline from which it was never again to recover. Why was the manufacture of cloth, destroyed with the order to knock down the outlying suburbs, not re-established in the city at the end of the conflict? In 1571, about fifteen years after the last siege, the weavers of Ivrea, many of whom had probably lost their homes as well as their work, appear to have moved elsewhere. Seemingly most of them chose to emigrate to Biella, a city not far from Ivrea, with which it had very close social and economic ties (Alfani, 2005) and where economic activities had prospered throughout the conflict.⁴⁰ After the peace of Cateau-Cambrésis in 1559, only the presence of particularly favourable conditions in their home town could have induced them to return, conditions, however, that were lacking. First, there was the growing economic-demographic competition of Turin (transformed in 1560 into the capital of the House of Savoy), which had a negative effect on Ivrea just as it did on the rest of Piedmont (Levi, 1985), and second, there was the reinforcement of the Mont Cenis Pass, diverting part of the trade with France that had passed through Ivrea and the Aosta Valley since Roman times (Alfani, 2010d). As a matter of fact, the 1613 census of Ivrea lists only 25 weavers and 3 dyers.⁴¹ To a certain extent Ivrea's misfortunes were an opportunity for Biella, which was able to consolidate its own role as a manufacturing centre of textiles, a specialization that it retains today and of which no trace at all remains in Ivrea. These fates, so different between cities originally similar, are a first sign of the way in which a long and complex conflict like the Italian Wars from time to time provided incentives and disincentives to growth and determined winners and losers independently of the result on the battlefield.

The case of Ivrea enables us to highlight another important aspect of the Italian Wars that involved urban populations: the presence of foreign garrisons, with whom civilians had somehow to live and interact.⁴² In the 13 years between 1542 and 1554, when a Spanish garrison was present in the city, we find clear traces of the desire on both sides to establish formal social contacts. Thus, the *milites Ispani* appear repeatedly in the parish registers as godfathers: in fifteen cases in the parish of San Ulderico, where there are also three godmothers, registered as wives or *amasie* (mistresses) of one of the occupiers.⁴³ The importance of these contacts, even though relatively rare, should not be dismissed. If between the population and the occupiers there was inevitably a certain wariness – certainly intensified by the destruction of the suburbs ordered by Morales in 1544 – godparenthood and spiritual kinship could contribute to building bridges and to healing sociopolitical fractures. However, it is always the citizens of Ivrea who ask the occupiers to be godparents, and never the other way round (in the few baptisms of children of the Spanish of which I have information, all the godparents are

their fellow countrymen). Godparenthood in this way reinforced, symbolically, too, the relationship of dependence of the civilian population on the foreign military authorities, and perhaps enabled the Spanish officers to create their own network of patronage in the city, establishing a system of favours and small services that were a far more effective *instrumentum regni* than the mere force of arms. Nevertheless, for an occupation to be peaceful, it cannot become a form of organized robbery,⁴⁴ and it is obvious that the presence of a garrison also created economic opportunities (who would supply the Spanish with their daily needs?), if not opportunities for social advancement. A relationship of *comparatico*, that is to say the tie of spiritual kinship between a godfather and the parents of his godchildren, could help them to make full use of such opportunities, drawing together people who would otherwise have been strangers, and redirecting their relationships within a regulated and therefore in some way 'protected' social context (Alfani, 2009a: 202–4).⁴⁵ I will come back to the opportunities offered by the war to Italian urban economies.

Damage in rural areas

Until now I have concentrated on the cities, which were certainly object of the most spectacular devastation and destruction, sometimes such as to leave a lasting mark in memories and in the collective consciousness even at a great distance in time, as in the case of the sack of Rome. This though should not lead us to imagine that rural populations had a better chance of preserving their possessions – and their lives – from the passage of a hostile army. Indeed, without the strong walls that protected urban dwellers, the *rurales* ran far greater risks, including that of being forcibly recruited into an army, whether 'friendly' or 'hostile'⁴⁶ (Hale, 1985: 196). They therefore had very good reasons for taking refuge in the city, abandoning most of their possessions and despite the extreme hardship they had to face there.

Already mentioned is the systematic destruction for defence purposes in the area immediately surrounding the city, but the devastation could affect a much larger area. This is how the elders of the community of Parma described the conditions in the city and the countryside to its ambassadors at the Papal court:

13 February 1527. [...] All around the countryside, up to six miles from the city, there is no bread, no wine, no hay, no straw, especially where our soldiers were and are billeted, no food reserves, no barrels (of wine or other), but everything has been burnt. Many houses have been burnt and are burnt each day, barns are burnt, losses of hay and straw, many animals great and small have been eaten by the soldiers who are openly robbing us. They sack houses in many places as if they were Spanish or Landsknechts; they pillage and steal animals, furniture more than the

enemy would do, putting at risk the life of citizens. Streets are unsafe, merchants are taken and all goods and every kind of food being transferred by road are stolen, so that it seems we did not suffer so much in past sieges. In much of the territory of Parma work has come to a halt: they are not sowing broad beans, cabbages and legumes that make up much of the harvest, vines are not pruned, woods are not cut [...]. (Cit. in Romani, 1975: 221–2, our translation)

This is even more appalling seeing that the elders are lamenting the behaviour of their allies, who ‘have pillaged our country more than the Turks or mortal enemies would have done’.⁴⁷

While it is true that in the ‘official’ descriptions of material damage the civil authorities exaggerated in order to obtain tax relief and other assistance, the similarity of the evidence found in accounts and memoirs leaves no doubt about the gravity of the devastation wrought in the countryside. Violence and pillaging generated in the rural population profound resentment and a desire for vengeance that it was rarely possible to satisfy. When the siege of Naples failed in 1528, and the French, defeated and deprived of their arms, were allowed to leave for their country, they were attacked by the rural people, who robbed them of all their goods and killed most of them (Guyon, 1664: 44), thus taking vengeance on whoever they could for the plundering perpetrated both by the French and the Imperial forces for many miles round the city.

In normal circumstances, a well-paid army, controlled by its officers, could live in a civilized way with the local populations, as was the case mentioned above of the Spanish garrison stationed in Ivrea. The same could be said for rural areas, whose inhabitants were usually asked to provide victuals, lodging, services and labour for the troops posted there or simply in transit, as was the case, for example, in the Venetian Republic at the turn of the fifteenth century (Pezzolo, 2006: 67). Contemporaries, however, felt that the Italian Wars marked a clear decline in relations between civilians and military personnel, caused by what, according to Guicciardini, was an unprecedented tendency to satisfy the armies with the booty plundered during the campaigns:

even if after the ancient times, when military discipline was administered strictly, soldiers have always been licentious and a burden for the people, nevertheless [...] they lived largely on their own money and their licence did not become intolerable. But the Spanish for the first time in Italy began living off the substance of the people, the cause and maybe the necessity for such behaviour being the fact that their kings [...] paid them badly, a principle from which corruption spread [...] and like the Spanish themselves, the Italians also began behaving in such a way, whether they had been paid or not, so that to the great shame of the military of

today, the goods of friends are no more safe than those of the enemy on account of the wickedness of soldiers. (Guicciardini, 1561: 578–89, our translation)

A few years previously, the *condottiere* Orso Orsini had warned that badly paid troops ‘always go vagabonding’ and ‘they wait and see how they might steal some wagons of their allies or commit rascally and miserable acts’ (Orso Orsini, *Governo et exercitio della militia*, 1476, cit. in Settia, 2002: 25, our translation). It is hardly surprising, therefore, if the difficulties met by the Spanish Crown in procuring supplies and money for the army fighting in the campaign in southern Italy encouraged its troops to procure ‘on the field’ both the resources that it needed for its war requirements and its pay. The prolonging of the conflict jeopardized the finances of all the powers that took part, and spoils and plunder became almost a physiological need for an army that intended to remain operational. Extortion, settlements and ransom became everyday matters; sacks multiplied and often had to be promised to the troops to induce them to fight; the pillage of the encampment and the baggage trains of the defeated enemy always the ambition of armies,⁴⁸ became ever more crucial in motivating soldiers. In fact, the systematic pillaging of the territories that they passed through swelled the booty of the armies, and the riches accumulated were a temptation to the adversaries. Guicciardini, writing about the Imperial victors of Pavia who pillaged the King of France’s camp, said that ‘there was so much plunder that never before were there richer soldiers in Italy’ (Guicciardini, 1561: 1520, our translation). After the battle, moreover, that very same army rapidly deserted because its pay was in arrears (Florange, 1731, vol. 2: 247–9).

Who paid for the Italian Wars? Items for a balance sheet

The practice of financing military campaigns with the plunder from the territories crossed poses a fundamental question: did the foreign powers who fought for supremacy in the Peninsula finance their campaigns with riches pillaged in Italy? Certainly, at the outbreak of hostilities the French considered the Italian adventure economically and financially viable. Ludovico il Moro himself had suggested that their campaign would not have been unduly costly but, on the contrary, promised future profits (Hamon, 1998), and it is a quite widely held view in French historiography that Italy financed the Italian Wars, both because the fighting armies maintained themselves, at least partly, with the booty pillaged from the territory and because the revenues from the conquered territories, collected in peacetime, compensated for the expenses of the wars. Thus, according to Pierre Chaunu, ‘the flow of the armies [from France to Italy] does not imply a flow of money’ (Chaunu and Gascon, 1977: 158, our translation). Traditional Italian historiography, for its part, has stressed the spoliation at the hands of the ‘foreigner’ as being

a contributory cause of economic decline in the Peninsula (Pugliese, 1924; Pepe, 1952; Pieri, 1952). From this perspective, the views that have recently emerged in French historiography are extremely interesting. They are no longer so sure that France really profited financially from the Italian Wars or, at least, did not suffer. These observations would imply a less negative picture of the situation in Italy, scaling down (or even actually reversing) the flow of riches from the Peninsula. Moreover, Maurice Aymard had already pointed out that despite the best efforts to 'live off the territory', war (not even when won) never entirely managed to pay for itself. At most, it managed to limit the costs or partially compensate for them. Any profits would not be easily or quickly monetized, as it was a question of territorial gains or the acquisition of power and glory (Aymard, 2000).

Philippe Hamon has attempted an economic profit and loss account of the revenue and expenditure sustained by France to finance the Italian campaigns between 1494 and 1525. In 1494, the annual revenues expected from the Kingdom of Naples amounted to 1.5 to 1.6 million ducats; in 1509, the expected revenues for the Duchy of Milan were 300,000 ducats. These amounts, which it was hoped would become a regular revenue in peacetime sufficient to make it possible to reduce the tax burden in France, proved, however, to be considerably overestimated. Already in 1502, the Spanish and the French, for once allies in the conquest of the Kingdom of Naples, had a joint income of just 507,198 ducats, about a third of that estimated a few years previously. Overall, the tax revenues collected while the French were in southern Italy were 'at the same time punctual and haphazard' (Hamon, 1998: 27, our translation), and the largest actual revenue corresponded to the sum paid by the Spanish Crown in compensation for the final renunciation by the French to any claim whatsoever to Naples.⁴⁹ The French were more fortunate with the Duchy of Milan, which was occupied for more prolonged periods. In this case, already in 1500 the estimates proved accurate: the revenues amounted to 315,000 ducats, increasing in time because of the growing tax burden imposed on Lombardy to 1,614,006 *tournois* lire in 1518 (approximately 730,000 ducats). To these regular revenues, extraordinary revenues can be added, like the 600,000 ducats received from Louis XII in 1500, for the tributes levied on cities both in Lombardy and elsewhere, which had supported Ludovico il Moro, and for the contribution granted by the allies. There were also the enormous sums paid by Florence to persuade the French to help them recover Pisa, which had become independent in 1494 (Hamon, 1998: 26–30).

However, these extraordinary revenues were matched by the equally astronomical extraordinary expenditure. This went to pay pensions to the lords divested of their possessions (50,000 *tournois* lire annually to Federico of Naples from 1501; 72,000 to Massimiliano Sforza from 1515); to compensate the allies (20,000 ducats annually promised by Louis XII to the Duke of Savoy, then reduced in 1500 to 10,000); to obtain the investiture of Milan

from the Emperor (200,000 tournois lire allocated in the Treaty of Blois in 1504, of which more than a half was actually paid); and to guarantee the support of powerful families and of Italian *condottieri*.

There is also the complicated issue of the expenses for the military campaigns. If, as I have already pointed out, a characteristic of the Italian Wars was the marked tendency of foreign armies to finance themselves by plundering the areas that they crossed, from the military authorities' point of view the problem was somehow to manage ongoing expenses: for the soldiers' pay⁵⁰ and to buy those products (arms and munitions, for example, but also simple victuals), which could not be guaranteed even by systematic plundering.⁵¹ The total outlay for various needs exhausted the revenues obtained from the Italian possessions, and in the most critical situations the increasing number of men stationed in the territory obliged the French Crown to intervene heavily, dispatching to Italy convoys laden with gold and silver coins, or issuing bills of exchange with the mediation of bankers from the Peninsula. For the victorious campaign of 1515–16, which culminated in the great victory of Melegnano, Francis I had to invest a minimum of 7.5 million tournois lire; the first conquest of Lombardy in 1499–1500 had already required 3 million.⁵² These sums are equal to the total amount of the overall revenues collected by the Duchy of Milan between 1499 and 1521 – revenues that mostly were not available, as they were allotted for the running of the Duchy itself. If to this we add the 30 million tournois lire (approximately 18.9 million ducats) used by France to finance the campaigns of 1521–29, spent mainly in the Peninsula, we cannot but conclude that France in no way grew rich from the Italian venture (Hamon, 1994: 44–8, and 1998: 30–7). At a purely financial level, all the Italian campaigns closed in deficit, right from Charles VIII's expedition of 1494–95, not least through the loss of the royal baggage train at Fornovo (Labande-Mailfert, 1975).

If we accept, at least in principle, the idea that revenues in peacetime can make it possible to accumulate resources to be used in war – in practice, this is an extremely difficult goal to achieve because of the opposition of the communities to 'unjustified' taxation⁵³ – one wonders whether the case of the Spanish, who were permanently established in Italy from 1504 in the Kingdom of Naples and from 1535⁵⁴ in the Duchy of Milan, is any different. In the case of Naples, the fact that an Aragonese dynasty had reigned there since 1442 should not lead us to suppose that there was a continuity of 'Spanish' government, as the way in which the kingdom came to be part of a great supra-national empire was a novelty for this territory. It was a complicated process for which Giovanni Muto (1980) suggested a division into periods viewed in the light of the dynamics of public finances. In this division, the expansion of the Spanish possessions to include Milan in 1535 marks a change.⁵⁵ From that moment, substantial sums of money began being transferred from the south to the north of the Peninsula.

If the Kingdom of Naples suffered considerably during the first two campaigns of the Italian Wars, later it was almost completely spared (except for the expeditions of Lautrec in 1527–28, which I have already mentioned, and of the Duke de Guise in 1557). From this perspective, the best way of defending territories, whose extremely long coastline involved a constant risk of being invaded from the sea and of raids by pirates,⁵⁶ became the subject of a debate in which financial viability was at least as important as strategic considerations. The result was that in the 1560s and 1570s, with the establishment of a navy of 50 galleys, Naples became the cornerstone of the Spanish naval defence in the Mediterranean (Fenicia, 2003). It is in connection with this broader imperial scenario that the military expenditure of the Spanish government in the south of Italy should be viewed and, above all, the increasing importance of the Kingdom of Naples, second only to Castile, as supplier of the financial means needed to maintain Spanish supremacy in Europe. In fact, 'this position of the Kingdom among the Habsburg dominions created, if not exactly a sense of pride, at least a kind of awareness on the part of Naples of its own standing in Europe; and the position of the Viceroy of Naples was considered in Madrid and in Naples one of the foremost, if not the first, among those on the periphery of the monarchy' (Galasso, 1994: 23). The importance attributed to the kingdom resulted in a tax burden greater than that borne by other parts of the Empire, and that obviously in part it tried to avoid, more successfully in the first half of the century (when the Italian Wars were in full swing, wars that again proved impossible to finance, unless in part, by *in loco* collections) than in the second, when the ability to control and collect taxes improved, making it possible to increase considerably the amount donated to the Crown, settled at around the enormous sum of 1.2 million ducats every two years from 1566 (Coniglio, 1951; Galasso, 1994). Once outside the Kingdom of Naples, however, the donative did not necessarily leave Italy, as it was spent mostly in Lombardy.

Unlike the Kingdom of Naples, the Duchy of Milan was the main battlefield for most of the conflict. The interest of foreign monarchies in this state depended not only on dynastic claims (since the times of Louis XII) and feudal rights (the duchy was an Imperial investiture), but also from the firm conviction that it was one of the richest and most advanced areas in Europe.⁵⁷ Furthermore, there were additional strategic considerations that recognized that Milan was the key to ruling over the whole Peninsula. Thus the city was to become the focal point of the defence system of all the Spanish possessions in Italy, so much so that already in 1521 Mercurino da Gattinara stated that the money spent to ensure control of Milan should be put towards the defence of Naples and Sicily (Pagden, 1990; Rizzo, 2000b).

The duchy though had suffered tremendously during the first phase of the war and when, after the Peace of Cambrai in 1529, it finally ended up in the orbit of the Spanish Habsburgs, it bore clear signs of the damage

inflicted. Despite this, it was still considered by observers of the time (the Venetian ambassadors *in primis*) a rich and flourishing land (Rizzo, 2000b: 160–1). Traditional historiography suggests that Lombardy was exploited and drained dry of its resources in order to finance the second phase of the Italian Wars (1535–59), as well as the conflicts where Spain was protagonist in the second half of the sixteenth century. Today, though, we know that this interpretation is basically flawed. After the period, which Mario Rizzo defined as ‘the decade of doubt’ (1535–45), when Charles V on more than one occasion considered ceding the State of Milan to settle the dispute with France, this Italian possession came to be considered an essential part of the Spanish Empire, the focal point in effect of a military but also a social and economic system, which as well as Milan, Naples and Sicily included the Burgundian territories, Belgium and Flanders (Chabod, 1985; Rizzo, 2000b, 2005, 2007a).

In some ways, and certainly from a logistical point of view, in the European wars fought by the Kingdom of Spain in the second half of the sixteenth century, in comparison with the Iberian Peninsula, the State of Milan was more centrally located; it was the real *corazón de la monarquía* (heart of the monarchy), according to a recurrent definition. It is to be considered then, ‘a state within the Spanish Empire’ and not merely an exploited territory or a semi-colony. It was therefore as part of a whole and vaster territory that Milan (like Naples) was called on to contribute financially to enterprises that, involving distant lands, probably would not have affected it had it remained autonomous (Vigo, 1994). For these reasons, it would be incorrect to link directly the ‘Milanese’ or ‘Neapolitan’ revenues of the Spanish Crown with the expenses incurred (also in Lombardy or, regarding naval defence, in the south of Italy) for the financing of a war principally fought elsewhere.

It is better here to defer any further discussion on the destinies of the Duchy of Milan, the Kingdom of Naples and other territories under ‘foreign’ control to an evaluation of the basic trends that were typical of the economy and the Italian population in the course of the whole of the sixteenth century. It is necessary, however, to stress here the fact that Milan’s role as military garrison and as essential logistical junction of the Spanish Empire brought some undeniable advantages to many cities in Lombardy,⁵⁸ a destiny largely denied to Naples due to the need to reduce expenses for the fleet, whose maintenance soared to an annual 420,000 ducats; such a need was already apparent in 1575 (Fenicia, 2003). The city of Milan became a collection point for products made also in other Italian states (for example, arms forged in Brescia) and bought by the military authorities to be distributed in different war zones in Europe: this was armour, the long-established pride of Milanese manufacturers, as well as bladed weapons and firearms, clothing and victuals. The city also provided a series of auxiliary services like packing and transport, besides functioning as a general broker (Vigo, 1994; De Luca, 1996; Rizzo, 2000b). Also military units employed elsewhere,

in Flanders, for example, passed through Lombardy or rested there. The 16,000 military personnel stationed in the Duchy of Milan in 1582, or the 32,000 in 1595, were supported with goods, produced or acquired mainly in the area, which sustained a varied 'billet economy' (Rizzo, 2000c). The growing Lombard specialization in producing 'strategic services', or broadly speaking in 'defence', within the Spanish Empire meant that a greater and increasing quota of Milanese public expenditure was destined for the army and for fortifications, already around 75 per cent in 1542, increasing to almost 80 per cent in 1576 (Rizzo, 2007b).⁵⁹

Being chosen by a great power as centre for the mass production of arms or military supplies could make a city's fortune (Hale, 1985: 221–3),⁶⁰ especially in a period of substantial growth in demand for armaments connected with the 'military revolution' that began precisely with the Italian Wars (Parker, 1988, 1995; Sallmann, 1998). Generally speaking, the presence of a garrison of a friendly army, disciplined by its own officers or in some way under supervision – and thus prevented from plundering the territory to obtain what it needed – meant a considerable increase in the demand for many goods. In this light, the armies in movement between the various Italian centres during and after the Italian Wars can be seen as a kind of 'mobile market', able to distribute favours now to one, now to another, in the same way in which in other circumstances the same troops meted out economic damage and material destruction. I have already underlined the fact that most of the sums collected by the European powers for various purposes in Italy were spent *in loco*, and had to be integrated with financial resources and real money coming from the mother country. Most of these sums were to cover the soldiers' wages, that is, to pay troops who were always ready to rebel, desert or even to defect. The case of the Landsknechts from the Imperial army was no exception. After the victory of Pavia they revolted because for many months they had not been paid, and to obtain satisfaction they actually kidnapped the Viceroy of Naples for some hours (Florange, 1731, vol. 2: 247–50). This was not exceptional, which is why remunerating troops adequately and punctually was always prudent – or, at least, it was wise trying to do so as far as circumstances allowed, considering that many strategic decisions were inevitably taken in an emergency. As Guicciardini remarked, in war those who try to save end up by spending more,⁶¹ and certainly Francis I regretted having laid off shortly before the rout of Pavia, 3000 men from the Grigioni to save on pay (de Monluc, 1592, vol. 1: 70). If there was no pay, it was usually because the money was not available. The commanding officers could then be induced to promising plunder and pillage to prevent cases of insubordination and desertion, and to tolerate, when not openly encouraging, the looting of territories that armies had crossed.

From the point of view of the civilian population, the professional soldiers seemed intent on prolonging the war indefinitely so that they would not be without a job (Harari, 2004: 101–3), a reasonable assumption, if we consider

episodes like the death of the Duke de Guise at the siege of Orleans in 1563, mourned by soldiers from both sides as a father because, like it or not, he was the one who procured their bread.⁶² The soldiers spent most of their wages during the campaigns: the uncertain outcome of war made saving even more insecure than life itself. The areas involved in military action, therefore, if, on the one hand, they supplied part of the means to pay the wages, could also become the final beneficiaries, without there necessarily being a connection between the areas or the individuals that paid and the areas or the individuals who received. Closer examination shows that this was an impressive redistribution of wealth, from which some Italian states greatly benefited. Even in territories that as a whole experienced suffering and substantial destruction, the war could make the fortune of single individuals who managed to exploit unprecedented economic opportunities. From this point of view, then, Carlo Cipolla's opinion (1993: 108–10) that war was the main form of 'negative production' in the preindustrial era – as it involved the conscious destruction of men and wealth – seems to me an appropriate description of a characteristic aspect of war itself, but does not explain all its various economic consequences.⁶³ Moreover, Cipolla, like many scholars of his generation, was probably influenced by his own experience during the Second World War, when Nazi occupation and allied bombing caused tremendous civilian damage.

The great European powers' Italian adventure then could not be maintained exclusively with the booty and the revenues obtained locally and, what is more, the expense of the Italian Wars proved devastating for their finances, but many Italian princes, merchants, bankers and entrepreneurs were to profit from them. Nevertheless, if the European powers that intervened in Italy made a loss, it remains to be seen whether Italy itself profited at all. It is at the moment impossible to make an overall calculation, one that takes into account the material destruction and the loss of economic skills and valuable competence (human capital) and correlates revenues and expenditure 'of war' for all parties involved. Even though we can certainly affirm that the general picture is not so gloomy, with damage limited both in chronological and territorial terms, and balanced by resources from abroad allotted to financing the war and the display of forces in the Peninsula, it is unlikely, if not impossible, that the balance was positive. Besides, as the conflict quickly spread to other parts of the continent, it is necessary to put the question in relative terms and ask if the damage wrought in Italy, or more precisely in the individual Italian states, by the wars of the first half of the sixteenth century was more or less apparent than in other European states. From this perspective, not only is the idea of an Italy reduced to a battlefield or a semi-passive victim of the clash between the superpowers of the time quite misleading, but when all is said and done, the essential point is to emphasize the wars' fundamental function of redistribution. Fortune, the 'blindfold goddess', often invoked to explain the success or ultimate

failure of ventures like that of Cesare Borgia⁶⁴ in the context of political, economic and institutional chaos, which for a long time characterized the regions involved in the Italian Wars, operated alongside the Horsemen of the Apocalypse to create a totally different scenario from the original one. The wars, in conclusion, created winners and losers in the Peninsula. I will come back to this later.

Once the conflict had ended with the Peace of Cateau-Cambrésis in 1559, a long period of tranquillity for the Peninsula began. In the words of Fernand Braudel, 'the treaty of Cateau-Cambrésis [...] could have been yet one more agreement in the air, like many others. This time, though, Italy will be launched into a lengthy, an extremely lengthy, peace, condemned to remain outside any form of belligerency by a kind of peaceful imprisonment. [...] The Peninsula will only be "slightly scratched" by the savage and devastating Thirty Years War' (Braudel, 1986: 37, our translation). This 'peaceful imprisonment' or the so-called *Pax Hispanica*, which the Habsburgs, already under pressure on other fronts, stubbornly tried to impose on Italy in order to avoid jeopardizing the stability of their possessions and undermining the complex construction of a trans-national empire, in which the Peninsula played a fundamental role (Braudel, 1974; Vigo, 1994; García García, 1996; Rizzo, 2000b, 2005; Spagnoletti, 2003), finally persuaded War to abandon Italy after a *grand tour* lasting several decades. The Italian conflicts of the second half of the sixteenth century and the beginning of the next were sporadic and of limited importance. Apart from episodes like the Spanish invasion of Finale in 1571, the War of the Montferrat Succession in 1613–17 and the War of Gradisca of 1615–17, the first great war fought in the Peninsula was the War of the Mantuan and Montferrat Succession in 1627–30.⁶⁵ On that occasion, War returned to Italy, accompanied by Plague and the terrible epidemic of 1629–31, when foreign troops were the first to transmit infection, profoundly affected demographic – and economic – trends in seventeenth-century Italy.

Overall, Italy in the sixteenth century clearly experienced war at close quarters. Even though not all the regions were directly involved, for many decades it was a cause of constant anxiety for the great majority of the population. Nobody could foresee, then, that the increased harshness of the conflicts, apparent right from the outset of the Italian Wars, would continue to worsen, reaching a kind of peak during the Thirty Years War, a conflict on a continental scale, whose participants or witnesses looked on Italy as an island of (relative) peace. In its progress around the Peninsula during the first decades of the sixteenth century, War was deemed to be the cause of other calamities because Famine and Plague seemed to follow in its path. However, the relationship between the Horsemen of the Apocalypse is far more complex than this description conveys, as will be shown in the next chapter.

2

Famine

There is no doubt that famine has always been one of the most feared calamities throughout the ages. Unlike the plague, hunger even today remains a scourge for many of the earth's inhabitants. According to the FAO, in 2009, the number of people suffering from chronic hunger had exceeded, also due to the economic crisis, the record level of a billion people, the highest figure ever reached in the history of humanity.¹ However, to a well-fed Westerner the risk of going hungry seems far more remote than that of catching an epidemic disease, if only for the fears recently created by diseases like SARS, avian and swine influenzas. In other words, the disappearance of the plague is in no way indicative of the definitive defeat of Plague.

This is perhaps why hunger has often been regarded, especially from a historical-demographic point of view, as a mere accompaniment to the plague. In other words, hunger is seen as the 'cause' of plague, but it is the latter that is to be blamed for the main effects of the crisis. Such a view, however, seems to be inadequate not only because this causal connection is debatable, but also because the experience of famine has been shared by innumerable generations of Europeans. In comparison with the plague and other epidemic diseases, it has left in the collective imagery an equally, if not even more, profound mark. Episodes of widespread famine are attested throughout European history, at least up until the middle of the twentieth century due to the food crisis triggered by the two World Wars,² and hunger on an individual level continues to afflict the most disadvantaged members of the continent's population.

The fact that war in the twentieth century brought famine back to Europe reminds us that the Horsemen of the Apocalypse often act in combination and it is no mere chance if, since time immemorial, they have been evoked together. In 1405, the deputies to the *Ufficio della Pietà dei Poveri di Cristo* (Office for the Piety of Christ's Poor), what today could be called a welfare organization, addressed in this way Duke Giovanni Maria Visconti: 'How can things go well in this miserable Milan, full of the hungry poor and the plague-ridden, who wander round the city exhibiting sores and

buboes, while plentiful and sufficient provisions are diverted? [...] It is for this wickedness, then, that God with the three scythes of hunger, war and plague inflicts apocalyptic punishments on Milan!' (cit. in Albini, 1982: 199–200, our translation). Not only did the deputies take for granted that the Horsemen of the Apocalypse tended to unleash themselves all together, but they were also inclined to link 'the hungry poor' to 'the plague-ridden'. We can detect in this way of thinking the beginnings of a tendency to lay the blame for the plague on the poor and, if we link hunger to the state of poverty – something that is not always true – even the idea that malnutrition can cause epidemics. Furthermore, mentioning together those who go hungry and those who suffer from an illness, establishing a quasi-equivalence between the relative symptoms ('sores and buboes'), seems to betray a degree of doubt with regard to the real cause of death. In effect, even today death from hunger poses important problems for historians and demographers, as there are those who would maintain that death from malnutrition is quite rare (Livi Bacci, 2000).

The subject of the poor and the plague will be further discussed in the next chapter. Now it is worth trying to separate what collective imagery has united, unravelling the complex modalities according to which war, plague and hunger interact.

The complex interaction between Famine, War and Plague

If we consider war, it was and is commonly believed that it brings in its wake famine and epidemics and therefore 'causes' them. As already mentioned in the first chapter, it is clear that hunger can be caused by the material destruction wrought by armies, especially in the rural areas that were devastated and systematically pillaged. The crisis can involve cities, when the food-provisioning authorities prove to be incapable of finding sufficient wheat to supply the inhabitants, or because the armies are positioned between a city and its sources of provisions; it is no mere chance that many of the episodes of extreme hunger can be traced to sieges. In the same way, war can bring illness and pestilence, as an army on the move is an excellent vehicle for the spread of contagious diseases. Thus, for example, the devastating plague of 1630 arrived in Italy together with the Landsknechts from Germany and with the French troops coming down from the Susa Valley, both armies involved in the War of the Mantuan Succession (Del Panta, 1980; Alfani, 2010b). What is more, the evacuees from the country, who try to find shelter in the city and are forced to live in difficult and overcrowded conditions, are an ideal environment for the spread of epidemics, as in the case of the terrible crowding (*stretura*) that occurred in Padua in 1405 (Cohn, 2002: 230).

However, the relationship between war and other calamities can also be reversed. Malthus numbered war among the 'positive checks' that could

intervene to resolve an imbalance between population and resources. According to this interpretation, whenever the population, following its natural tendency, increased beyond the safety threshold established by the number of inhabitants the state could adequately feed, the result would be a temptation, or even an incentive, to attack neighbouring states held to be richer in resources (Malthus, 1798). It is obviously difficult to demonstrate that this self-regulatory mechanism has been at work on some specific occasion in history. However, it will suffice to recall that hunger was identified, also by Malthus, as the initial drive behind the historical process characterized by mass migration commonly known as the 'barbaric invasions', invasions that eventually led to the fall of the Roman Empire, which, compared with Eastern Europe and the steppes of Asia, was relatively rich in resources (Azzara, 1999). The simple social psychology used by Malthus to describe the relationships between peoples and states (that is to say, need leads to attempts to seize from others what is lacking) can then be reproduced on an individual scale, and, as we will see, episodes of violence in some measure instigated by hunger abound in sixteenth-century famines. Besides, if we consider the main protagonists of the war – the armies – clearly they too could suffer hunger and not only when they were under siege. Finally, if it is true that an army was an excellent vehicle for spreading infectious diseases, it certainly could not aspire to being a healthy carrier. It was, in fact, precisely among the armies that the highest mortality rates were to be found, both because overcrowding and promiscuity favoured the transmission of disease, and because the harsh conditions complicated or made it very difficult, if not impossible, to adopt adequate measures of hygiene and provide treatment and therapies.

If the relationship of War with Famine and Plague is more complicated than generally supposed, the connection between hunger and disease requires even more caution. Also, in this case, a commonly held view tends to recognize a definite causal link: that is, famine leads to epidemics. Obviously the implication here is that the state of malnutrition weakens the system and makes it an easy prey to viruses and germs. If then we consider that, as Massimo Livi Bacci (2000) suggested, the human body can resist being seriously deprived of food for very long periods, we are faced with the problem of explaining the significant rise in mortality, which is one of the most striking demographic effects of a famine. Some diseases, and especially typhus, have been indicated as possible factors triggered by hunger, not only on account of the weakening of the body, but also because of the dreadful eating habits that the starving had to resort to in order to survive.

The problem of the causes of death during times of famine in the Early Modern Age is extremely complex and apart from Andrew Appleby's studies on eighteenth-century England (Appleby, 1977, 1978), to my knowledge, so far it has not been dealt with thoroughly or studied with the necessary statistical precision. In the next chapter, I will return to this and further examine the

problem of how to evaluate epidemic mortality from sources that often do not provide any explicit information on the causes of death. There are, however, two other aspects that need clarification in order to understand the way in which famine could lead to epidemics. In the first place, as Appleby points out, it is not necessarily a reduced innate immunity that favoured the development of epidemics in situations of malnutrition. Rather, it is possible that the spread of the epidemic agents was favoured by the increased mobility caused by famine among the poor. On the one hand, they moved towards the cities, where various institutions providing relief were available and could give some help. Taking refuge within the walls of the city, the homeless and poverty-stricken carried the infection there or by overcrowding the urban environment they facilitated the explosion of epidemics *in loco*, particularly of typhus (Appleby, 1977: 512). What Appleby fails to underline (perhaps on account of the difference between the scenario that he studied and the Italian situation) is that often the poor moved in the opposite direction: the 'useless mouths', largely (but not exclusively) made up of the poor, beggars and vagabonds, were expelled from the cities every time there was a risk that the food situation would become untenable. In this way overcrowding was reduced, the strain on supplies diminished and, to some extent, the risk of epidemics was also reduced. As I have shown previously, the useless mouths, this social and juridical category almost entirely ignored by historiography, were among the principal victims of the Italian Wars.

The second aspect that deserves to be mentioned here is the relationship between famine and plague. In this case, the problem is that of the identification of the pathogen. If, as most historians today seem to recognize, the agent of the 'historical' plague is the bacillus of the *Yersinia pestis* transmitted by means of a complex mechanism that binds human beings to the rats via a particular kind of flea, a process in which human beings play a part, but in which they are not the main actors (the *Yersinia pestis* is essentially a disease of rodents), then it is the alimentary situation of rats and not that of human beings that determines a more or less favourable environment for the epidemic to develop. It is not by chance that the identification of the plague continues to pose problems and to give rise to controversy, which will be detailed in the next chapter. It should though be stressed now that if the plague were really due to *Yersinia pestis* in its current form, then human malnutrition *could not* be the cause of a pestilence,³ and doctors and health authorities of the past,⁴ like some historians today, simply gave in to prejudice. It is certain, however, that a famine was often the occasion for an outbreak of a typhus epidemic, but in this case it is a typically human illness, although spread with the help of fleas.

So far I have dwelt on the complex modalities with which a famine can cause an epidemic. Not even in this case, however, can it be said that the relationship between Famine and Plague goes in one direction only: even a

serious epidemic, and especially a plague, could 'cause' a famine.⁵ As I will explain in the next chapter, one of the characteristic ways of combating plague in the Late Middle Ages and in the Early Modern era was the imposition of a ban on infected communities (in other words, their complete isolation, with guard posts along the roads, rivers and canals connecting them to the outside world) and the creation of effective sanitary cordons. The latter, if they limited the spread of the contagion, were, however, also a serious obstacle to the movement of goods, including food supplies. Therefore, it was not uncommon for the places under a ban to suffer from hunger (which was an incentive to try and force or elude the blocks – as in the famous case of the *rastelli*, or roadblocks, of Montelupo in 1630, Cipolla, 1977). So, in Brescia in 1577, 'neither bread nor wine nor meat, with or without money, were to be found, because they were banned by all the lands and neighbours' (Francesco Robacciolo, 1577, cit. in Preto, 1978: 28–9, our translation), and in Turin in 1598 the town clerk noted that during the epidemic, 'Dearth and hunger are only too often companions of the plague' (cit. in Picco, 1983: 75). Still, in 1743, when plague caused the last serious epidemic in Italy with almost 29,000 victims in Messina out of a population of about 40,000 (to whom should be added the 14,000 to 15,000 deaths in the surrounding villages from a population of little more than 22,000), many died of the consequences of starvation caused by the total isolation imposed on the city, and not because of plague (Del Panta, 1980: 181–2; Restifo, 2005: 27–8).

Dearth, hunger and famine: definitions and the development of extreme hunger

On close examination, Famine occupies the key position in the hierarchy of the relationships between the different Horsemen of the Apocalypse. It is Famine, when all is said and done, that the others had to contend with and it is famine that the European populations of the past had most often to cope with given that, according to some estimates, on average there was a bad harvest every four years (Slicher van Bath, 1977). We should, though, distinguish between a situation of mere food shortage and an actual famine. A bad harvest does not automatically lead to famine. Much depends on the harvests of the years immediately prior to it, which determine the level of reserve stocks, but it also depends on the geographical extent of the crisis (above all influenced by climatic factors), which regulates the viability of importing foodstuffs from outside sources. This then is a reminder that a famine is not only determined by the failure of harvests, but also by the failure of institutions that prove to be incapable of compensating for the shortage of basic food supplies. While each of these aspects will be analysed in detail in the course of this chapter, I will not dwell any longer on the theoretical distinction between dearth and famine.⁶ Here attention will be mainly

focused on the economic and demographic, institutional and sociocultural consequences of catastrophic hunger, that is to say of famine. With regards to this we can endorse, at least as a starting point, Cormac O'Grada's recent definition that, 'famine refers to a shortage of food or purchasing power that leads directly to excess mortality from starvation or hunger-induced diseases' (O'Grada, 2009: 4), apart from what has been observed with regard to the complexity of the relationship between Famine and Plague; underlining the fact that the demographic consequences of a famine are far more complex than a simple increase in mortality (see later); and clarifying the point that such a definition takes into account the 'entitlement approach' proposed by Amartya Sen (1981).

This approach shifts the attention from the simple availability of food resources in a given territory to the 'right' of the local population to have access to them. This suggests that there is a need to elaborate the picture described by Malthus, for whom famine was 'the last, the most dreadful resource of *nature*' (Malthus, 1798, ch. 7, my italics), while, as Sen has shown for the 1942–44 famine in Bengal, a situation of famine can also be created by humans even when there is sufficient food to feed the entire population.⁷ If O'Grada (like Sen) proposes an entitlement interpretation focused on purchasing power here in agreement with the object of our analysis (sixteenth-century Italy, with its changing local and supra-local institutions and its cultural specificities), the disparity in the access to food resources will be interpreted in the light of a broader institutional and juridical context, in which the 'market' and consequently the 'purchasing power' are only one of the components – and often during the acute phase of the worst famines not even the principal component. In the same way, the excess mortality due to hunger is not the only 'political' consequence of an unequal entitlement. In fact, the enormous effort to supply the cities made by urban authorities and institutions dealing with food provisioning can be explained by the need to maintain public order (Guenzi, 1982b: 17) and by a real dread of revolts caused not so much by a bread shortage as by the suspicion that there is bread, but that it is being distributed unfairly or hoarded. Another aspect to be considered is that, at least in the case of the most serious sixteenth-century famines (and certainly that of the 1590s), the crisis was brought about by a lengthy sequence of exceptionally poor harvests in a context of a large population and competition for resources, which resulted in very high levels of mortality.⁸ In other words, a typically Malthusian scenario, modified by the efforts of the institutions to redistribute resources among geographical areas as well as among socioeconomic groups.

I have already mentioned that death is only one of the possible effects of hunger, and that a famine could result in people behaving abnormally. As with plague, the crisis remains in the memory of survivors, not in that of the dead. However, unlike the plague, which killed most of those who caught it but, except during the most serious epidemics, infected only a minority

of the population, hunger on account of its very nature easily tended to become a mass phenomenon. In besieged cities, or anyway in those unable to obtain supplies, everyone or almost everyone experienced a reduction in their daily rations. Cases of extreme hunger could cause permanent damage to health, contributing further to the already present physical deterioration of the less privileged strata of the population. Even worse, however, was the mental damage: 'madness' was a frequent consequence of hunger,⁹ either because some of the 'alternative' foodstuffs that the population was forced to eat were the cause of soporific or drugged states (as with lolium or darnel¹⁰), or because a state of starvation (the extreme stage of malnutrition) can cause psychosis and personality changes. Sometimes brain damage was permanent, sometimes the 'mad' behaviour was reversible, limited to the period when there was a shortage or a complete lack of food.

The case of a siege can be a help to clarify the horrifying way in which extreme hunger could lead to altered behaviour. In 1573, during the civil war between the Huguenots and the armies of the King of France,¹¹ the Protestant stronghold of Sancerre was besieged. A vivid account of one of the survivors, Jean de Lery,¹² remains. This exceptional source, although concerning a place outside our specific interest (and although certainly influenced by the political and artistic objectives of de Lery as well as by specific literary *topoi*; see Nakam, 1975), makes it possible to return in more detail to the subject of extreme food shortages already analysed in the preceding chapter, for Italian sieges like those of Pavia (1524–25), Naples (1528) and Siena (1554).

In a year that was *per se* one of severe shortages in various parts of France, the 3000 inhabitants of Sancerre had to face a siege lasting seven-and-a-half months. The account records an appalling deterioration in their living conditions and in their eating habits. This is the sequence of events:

2 February 1573: The siege of Sancerre begins.

4 April: The first donkey is eaten, all donkeys and mules will be eaten within a month.

May: The besieged begin to slaughter the horses. This is an extreme measure because of the value of these animals, both for their potential usefulness in continuing the fight and because French culture was firmly opposed to eating horsemeat (Ferrières, 2004: 24–5).

June: Dogs, cats, rats, mice and moles are added to horses as an 'alternative' source of meat. Bread is rationed only from 2 June: too late, as the ration, although rapidly reduced from half a pound a day to a pound a week will not prevent all the stocks of wheat and flour from being consumed by the end of the month. The poor are expelled; most of them will die in the ditches surrounding the walls.¹³

25 June: The first temptations of cannibalism (examples of which would be discovered later), less than four months from the beginning of the siege.

July: The dearth of wheat forces the besieged to eat leather, bones and horns, grass, bread made with straw, nutshells, ground slate, paper and parchments (including antique specimens¹⁴), and even excrement.

21 July: Episodes of cannibalism come to light; the perpetrators are executed.¹⁵

17 August: The one remaining horse in the city is slaughtered.

20 August: The treaty ratifying surrender is signed. During the siege, more than half of the population had perished.

In town, the prices of foodstuffs obviously registered an increase during the siege. Thus horsemeat sold in May at the regulated price of 2 to 3 soldi per pound, before the end of August had risen to 20 to 22 soldi and nothing could be done to prevent the profiteering of the usual racketeers. Price dynamics, however, only to a certain extent relate to the advance of famine. When a particular type of goods is completely lacking – as happens very quickly in the case of wheat – its price becomes semi-symbolic and practically irrelevant. As will be remembered, in Siena in 1554, bread was rationed and distributed off the market, privileging combatants and reducing the ‘useful’ civilians (the useless were expelled) to a state of mere survival.

From an economic point of view what has to be emphasized is the permanent destruction of the means of production, which will compromise recovery once the crisis is over. Peasants, who slaughter donkeys and mules for food as they were unable to buy wheat, which must be paid for in cash at inflated prices, sacrificed a provider of energy crucial for tending their fields, while craftsmen forced to feed on their leather tools would find it difficult to resume their working activities.¹⁶ Damage to the population then is by no means negligible, not only on account of the mortality, which at Sancerre as in Siena and in other extreme cases of combined war and famine affected 50 per cent of the inhabitants (most of whom died from intoxication, dysentery and intestinal infections caused by the dreadful food¹⁷), but also due to the already mentioned permanent physical and mental impairment in the survivors that foreshadows lasting damage to human capital.

Such a crescendo in the food emergency, with different stages of nutritional and psycho-behavioural deterioration, is regularly found during a famine, although in different forms in towns and in rural areas and with variations relative to the specific situation. A siege, for example, immobilizes a population; in other cases, one of the most evident effects is that of the masses of the poor and hungry migrating desperately between various cities or intent on plundering the countryside. Italy on several occasions in the sixteenth century experienced serious famines, both in the first part of the century, often in connection with the Italian Wars, and in the 1590s when the longest, most widespread and terrible famine that Early Modern sources record had occurred.¹⁸

Hunger and famine in the years of the Italian Wars

As far as the famines – and the plagues – of the first half of the century are concerned, it is difficult to reconstruct accurately their extent and intensity on account of the scant demographic data, especially those related to movement (births, marriages, deaths) deducible from parish registers. As will be remembered, it was only with the Council of Trent in 1563, that the compulsory registration of all baptisms and marriages was introduced. Although it has considerably diminished in recent years, the early interest of Italian economic historians in what has been defined as the ‘alimentary problems’ of preindustrial economies (Zanetti, 1964) left us a certain number of monographs. These studies enable us to reconstruct a coherent picture, even though they do not allow us to chart maps systematically like those that will be proposed for later periods. It is thus possible, in various cases, to describe accurately the chronology of the crises, for example in the first part of the century, the city of Modena, in the heart of the region of Emilia, suffered hunger in 1502–03, 1511–12, 1519–20, 1528–29, 1533–34, 1539–40, 1551–52 and 1559–60 (Basini, 1970: 65). In Pavia, on the Lombardy Plain, substantial increases in the price of cereals, an index of a situation of dearth or famine, are to be found in 1503–04, 1518–19, 1525–26, 1528–29, 1531, 1539–40 and 1562 (Zanetti, 1964). These two examples, to which others could be added, are sufficient to give an account of the chronology of the crises that, while not exactly coinciding, all the same indicates a certain kind of coherence. This is even clearer if we consider that during the most serious crises, all the indicators that we possess suggest that central-southern Italy was involved as much as northern Italy. So, for example, in 1528–31 or in 1539–40, the crisis is to be found not only in Modena and Pavia but also in Parma, Florence and San Severo (Parenti, 1939; Fanfani, 1940; Romani, 1975). In Appendix 1, I include a table summarizing the chronology of the subsistence crises in Italy in the period 1470–1627.

Locally, the chronology of the crises can vary slightly from one community to another, particularly in this difficult period when it is often War that summons Famine to the territory. However, the cases that are most serious and widespread territorially are always linked to climatic and meteorological conditions that are unfavourable for harvests. From the perspective adopted here, it is worth concentrating our attention on these cases.

Generally speaking, the Italian Wars acted as a catalyst for the difficulties and imbalances that developed in Italy during the fifteenth century. Regarding population, after a phase of rapid growth that began around 1450, on the eve of the sixteenth century the population levels had once again almost reached those prior to the Black Death of 1348–49. Thus a certain strain on resources became apparent – in terms of the production capacity of agricultural systems and of the possibility of provisioning urban centres – which was accompanied by an adverse biological context, with frequent

episodes of plague and typhus epidemics (Del Panta, 1980). At the beginning of the new century, this situation was in part tempered by agricultural innovations introduced in large areas of the Peninsula, precisely as a reaction to shortages,¹⁹ and, in comparison with previous periods, by a certain decrease in the frequency and intensity of plagues. Therefore, a state of prolonged crisis could perhaps have been avoided and the consequences of the strain on resources could have been limited to a few years of dearth, but war brought the situation to a head. Between 1499 and 1559, hardly a year went by without a calamity: the vicissitudes of the war weld together these episodes in a kind of *continuum* of events that, however, are often only of local or regional importance. The situation would greatly improve after the Peace of Cateau-Cambr sis. In the last 40 years of the century the crises would become rare and of limited extent, except for the so-called 'Plague of San Carlo' of 1575–77 and for the terrible famine of 1590–93.

Before going on to examine the famines in the early sixteenth century, it is necessary to provide some clarifications on methodology. Demographic crises, in fact, are normally understood as 'mortality crises'. In the classic definition proposed by Lorenzo Del Panta and Massimo Livi Bacci, commonly used by historical demographers interested in the so-called 'pre-statistics era', a mortality crisis is 'a short-term disorder in the normal process of mortality that reduces the dimension of the generations to the extent that they will not be able to reproduce themselves entirely even if they make full use of their potential for recovery' (Del Panta and Livi Bacci, 1977: 405, our translation). In other words, a mortality crisis is one that prevents one generation from generating another of the same size, despite the increase in marriages and births that always follows a peak in deaths. This mechanism, known as 'recovery', accounts for the exceptional capacity of societies in the past to survive and to keep going immediately in the wake of even the worst calamities (Del Panta, 1980; Livi Bacci, 1978).

Del Panta and Livi Bacci's definition, like the model that they developed, has proved in time to be extremely useful in producing accurate chronologies of the crises that occurred in the course of the Early Modern era. However, it can only sporadically be applied to the centuries prior to the seventeenth century, when serial data related to deaths become extremely rare. I have already mentioned that the sixteenth century, from the point of view of the sources available, is a century of transition. Some traditional sources for historical demography, especially baptismal records, were often compiled and kept right from the early decades of the century, and sometimes even earlier (Corsini, 1974), while others, like the parish registers of burials, are almost completely lacking and cannot be adequately substituted by sources such as the 'city books of burials', records that refer to very specific urban settlements (the main cities), where a definite minority of the population lived. It is necessary therefore to put to good use the data available for mortality, taking into account that the first records of burials begin

to appear in the late sixteenth century (and thus before they were 'officially' introduced with the *Rituale Romanum* in 1614). However, it is preferable to give priority to the data regarding births, since these are the only ones that offer adequate territorial coverage to enable us to map out the recurrence of sixteenth-century crises in space as well as in time. Moreover, it has often been suggested that births are more sensitive indicators of food shortages than deaths (Cattini, 1978b, 1983; Bellettini, 1987; Sori, 2005), as the latter occur only in the final phase of the crisis and only when the frequent pressure on food supplies becomes catastrophic.²⁰ Actually, some scholars maintain that it is necessary to distinguish between 'demographic crises' in general and 'mortality crises' in particular (Goubert, 1968). This distinction though is essentially a secondary issue compared to the objective problem posed by the scarcity of alternative sources, a situation that has often led to a resort to data on births as the only basis for making broad comparative studies (Pérez Moreda, 1999; Alfani, 2007b).

In this and the following chapter, I have chosen to base my study of famine and plagues on a method that I have developed in order to analyse the spatial extent of crises that certainly occurred. First of all, among the communities for which I have data on births (or, for the second part of the century, on deaths), I identified those where it is possible to affirm with a reasonable degree of certainty, thanks to the supply of reliable local studies, that a given epidemic or famine occurred ('Certain crisis' in Figure 2.1). Then, I have formulated a kind of 'hypothesis of occurrence' based on the intensity shown in these places by the crises in terms of a reduction in births

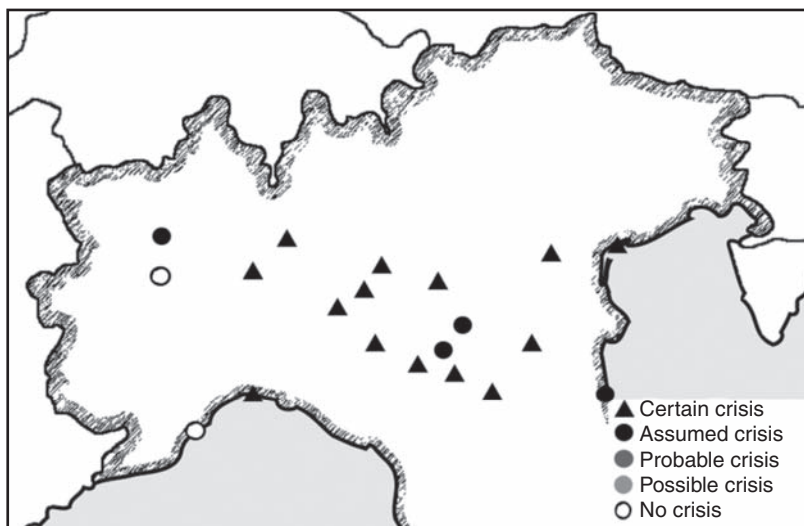


Figure 2.1 The alimentary and epidemic crisis of 1527–29

compared to a normal level. In particular, I have assumed that the famine or the epidemic also occurred in those communities where a decline in births is found that is equal to or greater, proportionally, than the average in the places where the crisis certainly happened ('Assumed crisis'). When a proportionally smaller decline in births occurred, I have formulated correspondingly weaker hypotheses.²¹ It has been possible to apply this technique only to northern Italy, the macro region to which the database of the historical series described in the Introduction refers. Note that the type of representation this leads to, although extremely effective in reconstructing the likelihood of a crisis over a large area, has the disadvantage of putting places with very different characteristics (for example, large or small cities and rural communities) on the same plane. For this reason, the maps used in the first part of this book are to be considered as only one of the two fundamental components of a methodology that includes a second key element, which is the aggregate series for specific areas or settlement contexts, shown in the form of a graph and analysed in the final chapter. Both techniques are to be considered essential in order to formulate an overall interpretation of the consequences and importance of the sixteenth-century catastrophes.

All in all, this method has made it possible to identify two particularly unfavourable cycles for the period of the Italian Wars where typically famine and epidemics concurred and were widespread: the periods 1499–1506 and 1522–30. In the first case, the role of Plague clearly prevails over that of Famine, which is why it will be dealt with in the next chapter.

Dante Zanetti already expressed surprise at the exceptional simultaneity in the movement of the prices of wheat during the famine of 1528–29 and the one of 1539–40, in places as far apart as Pavia, Florence and Bari, all with very different political organizations and agricultural systems. He concluded that this could be attributed only in a small measure to the integration of markets; 'alternatively, it is possible to assume that the political events, military operations and, even more, the exceptionally adverse weather conditions that convulsed the life of the whole country in those years, affected the harvests in the same way, causing identical and simultaneous effects in distant markets' (Zanetti, 1964: 93, our translation). The distinction made by Zanetti between the role played by War and that played by climate is fundamental to a full understanding of the nature of the great famines. On a closer look, War, whose action is often decisive in the transmission of epidemic factors, on the whole plays a minor role as a cause of famine, mostly having a local impact. As detailed in Chapter 1, there are thefts and commandeering of supplies, animals and equipment, as well as material destruction such as the burning of fields and farms, and obstacles to the circulation of foodstuffs of which a siege is an extreme case. It is, rather, the climatic factors that are mainly responsible for the worst famines, and those of 1528–29 or of 1539–40, albeit serious, did not have effects comparable to the terrible shortages of 1590–93. What transformed the latter

into a real catastrophe, however, were not only the particularly adverse weather conditions, but also the strain on the resources determined by the rapid growth in population that followed the end of the Italian Wars. In other words, the Italian population, with few exceptions, fell into a classic 'Malthusian trap' (Alfani, 2007b, 2010a).

Climate, therefore, is the main culprit in the most serious famines; adverse weather conditions mark the moment at which any weaknesses come to light. Without any further unfavourable factors, 'dearth becomes famine when, as well as the failure of the cereal harvest, fodder is in short supply and, above all, when the grape harvest fails, which is usually a support to the local economy and supplies most of the financial means required to purchase wheat' (Basini, 1970: 65, our translation). This is true at least in the wheat-growing plain, while in the hill and mountain areas a wider variety of crops can be found, which offers also some protection in the case of adverse weather conditions (Cattini, 1988b; Alfani, 2007b). Keeping in mind the differing vegetative periods of the many varieties grown and their differing vulnerability, the complexity of the way in which variable meteorological conditions affect the overall production of food supplies becomes clear (Finzi, 1986, 2002; Alfani, 2010a).²²

Moreover, not only does bad weather damage crops directly, but it also encourages the development of plant diseases, especially fungi that proliferate in humid and warm conditions. The worst grain disease to appear in the Modern Age, blight or rust (so-called because it changes the colour of the plant so that it turns a brownish-red) seems to have played an important role in exacerbating the famine in the 1590s and it is anyway reported here and there in the course of the century, with chronicles indicating it as a contributory cause of famine (Corradi, 1973; Aymard, 1973b). The close link that exists between the appearance of blight and the occurrence of rain or damp mist, already well known to Roman agronomists, was later a much discussed issue and clearly recognized by scholars in the Early Modern Age, for example Vincenzo Tanara (Ferrarese, 2010). Another fungus, a parasite of rye, caused instead the most terrible form of the feared St Anthony's Fire (ergotism). According to Cunningham and Grell (2000: 208), in the sixteenth century it was particularly common in France, from where it was transmitted to Germany in 1581. Recently, Claire Billen (2010) has suggested that ergotism, attested by hagiographic sources in north-western Europe from the tenth century, advanced in step with the spread of rye, beginning in the Carolingian period (especially in cold and recently colonized lands) and taking the place of those hardy cereals that were more common in late antiquity, that is to say barley and millet. European populations were slow to link ergot (the parasite) to the pathology, doing so only in the seventeenth century (Billen and Zeebroek, 1994) and providing instead a cultural kind of solution: with the invention of the sickness called *ignis sacer* (holy fire) and the institution of cults and specific devotional practices. In this case, too,

the appearance of the disease in crops was due to an extremely unsettled climatic condition (Billen, 2010).

If crop diseases played an important role in causing serious food shortages, human diseases frequently augmented the demographic effects of the famine. In 1527–29, the acute phase of the negative cycle of 1522–30, the general famine that started in 1528 was preceded by the reappearance of the plague from 1522, when Sicily, Rome, Perugia and Florence were infected. In the following years the disease continued to rage, affecting almost the entire peninsula by 1527. In central Italy, the sack of Rome greatly contributed to the spread of the plague. As one witness narrates:

Given the conditions that prevailed in Rome (that is, being prey to the godless and thieving soldiers of the Bourbon), not for days, nor weeks, but months, also war from heaven ensued; God, the very righteous castigatōr of wrongdoings, led those people to such extremes, that they no longer had anything to eat, as they had already consumed what was in Rome and in the surroundings. God took from them even their wits so that they committed violence even towards those who from some place brought victuals into the city. So there was no longer anyone who wanted to bring anything, and once having eaten the horses and donkeys, the dogs, the cats and the rats from the houses, the poor and common people started to eat what they could find and what appeared before them, either grass, or roots, provided that they thought they could get some solace from the great hunger that they suffered. Wherefore many of them came to be so afflicted that they no longer looked like men, but shadows and dark skeletons and portraits of death. From this famine so that their iniquity would be better punished, among them was born such a pestilence that there was no street in Rome that one could not behold full of men dead or stricken by plague and nigh to death, shouting miserably and calling on death. (Buonaparte, 1527, cit. in Corradi, 1973: 396–7, our translation)

Those fleeing the cities carried the infection into the countryside and the towns in Latium and beyond. According to our witness it was Famine that invoked Plague, but probably what fuelled the serious outbreak of the epidemic was rather the occupation of the city by the Landsknechts, who, what is more, were among its principal victims. In effect, the case of the 1528–29 famine illustrates the way in which Plague can bring with it Famine and not vice versa. The circulation of goods hindered by the state of war in which much of the Peninsula found itself was exacerbated by the measures taken to prevent the spread of epidemics, thus transforming a year of food shortages, but not an exceptionally bad one, into a serious famine whose victims could not be distinguished from those of the plague, as in the case of the 15,000 dead estimated for Bologna (Corradi, 1973: 397).

As is known, in these circumstances the unborn should be added to the deceased. So in Bologna, Parma and Piacenza, compared to the normal level of the preceding years, births fell by an average of 28.5 per cent. This reduction is taken as a reference to formulate, according to the modalities previously indicated, the hypotheses implicit in Figure 2.1²³ (note that, given the scarcity of the series available for this relatively remote period, it is not a completely satisfactory example of the application of my method, as can be seen from a comparison between Figure 2.1 and Figure 2.2).

Figure 2.1 suggests that the three-year period of 1527–29 signalled a general crisis in northern Italy, involving the central and eastern part of the Po Valley, north and south of the River Po and sparing only western Piedmont and Liguria, areas close to the Apennines and Prealps where dependence on cereal crops was less marked. The simultaneous presence of plague and hunger in this crisis, and the consequent difficulty in distinguishing between death from disease and death from starvation, as in the case of Bologna, are not only the consequence of relationships of cause and effect, whose complexity I have mentioned more than once, but in part derive from the difficulty that we have in making a precise distinction between deaths from different causes,²⁴ a difficulty that in turn is the result of the uncertainties of the contemporary observers. On the one hand, famine is often associated with epidemics of dysentery²⁵ and abdominal or petechial typhus²⁶ (the famous doctor Girolamo Fracastoro, the first to identify this disease, described epidemics of petechial typhus that broke out in 1505 and 1528; Del Panta, 1980). On the other hand, it has been suggested that during the great pestilences, the epidemic could have been jointly attributed to both plague and typhus, a supposition that would explain some of the characteristics of the illness and the decisions taken by the health authorities (Henderson, 2001). For the moment, we need only note that all the great famines in the second half of the sixteenth century and the beginning of the following one are accompanied by typhus epidemics.²⁷

The great famine of the late sixteenth century, 1590–93

Generally speaking, the famines that occurred during the Italian Wars seem to be linked to adverse climatic factors, made worse by the presence of War or Plague. The fact that meteorological conditions alone do not seem sufficient to account for the occurrence of crisis gives the impression that the potential for food production, combined with the capacity of the provisioning authorities to stockpile supplies and to act as a buffer for the fluctuations of harvests, would have been sufficient in the absence of other adverse conditions to handle the shortages thus averting the catastrophe. In other words, we do not come across a situation of systematic reduction of per capita resources, which from a Malthusian point of view tends to evoke the intervention of Famine as a regulator. The situation changes radically in the

second half of the century when, at the end of 30 years of dynamic population growth, following the Peace of Cateau-Cambrésis, Italy had to face what was probably the worst single event of the sixteenth century: the famine of 1590–93, of which there had been some forewarning already in 1569–72 and in 1586–87.²⁸

It has been suggested that this famine was merely one episode of a general European crisis covering the whole of the 1590s. In that period, for reasons that varied from zone to zone and with events that did not coincide exactly chronologically, but always with the concurrence of exceptionally adverse climatic factors, famine and popular revolts occurred in every, or almost every, corner of the continent, often in times of war (for example, in France, in the last phase of the Wars of Religion; Kamen, 1976; Clark, 1985). In the case of Italy, however, the crisis takes on a special significance, not only because its range cannot be explained without taking into account the situation of critical exploitation of the resources determined by a too substantial population growth, but also because it is commonly thought to be a sign, or an omen, of the incipient economic decline of the Peninsula (Romano, 1962, 1971; Rotelli, 1967; Romani, 1983; Davidson, 1985), a theory that in this book I intend to demonstrate is unfounded.

The first signs of crisis can already be seen in the autumn of 1589, when rain caused floods in Campania and Tuscany and in Rome. In Bologna, due to the *male stagioni di tempo* (bad weather), the harvest proved to be extremely poor and it was necessary to compensate for a serious food deficit by importing 60,000 *corbe* (baskets) of wheat, mainly from the Duchy of Este (Predieri, 1855: 65). The bad weather continued in the spring of 1590, when heavy rain was reported also in Emilia and Lombardy, added to which were the floods and storms on the Venetian mainland (Basini, 1970; Corradi, 1973; Davidson, 1985). However, it is necessary to see these as simple examples of adverse meteorological conditions that involved all, or almost all, the Peninsula as they did most of Europe. It should also be considered, as Emmanuel Le Roy Ladurie has suggested, that around the 1550s or 1560s a 'Little Ice Age' commenced, which would last until the middle of the nineteenth century; the size of the Alpine glaciers would reach a record maximum in 1600 (Le Roy Ladurie, 1967). Although the exact timing of the Little Ice Age continues to be the subject of debate (Bruce Campbell, for example, recently placed it between the middle of the fifteenth and the middle of the eighteenth century), all the reconstructions agree on one point: in the second half of the sixteenth century, average temperatures reached their lowest point in a thousand years (Appleby, 1980; Pfister et al., 1999; Fagan, 2000; Loehle and McCulloch, 2008; Campbell, 2010).

In 1590, in numerous localities in Italy it became clear that crops would be extremely bad. From Modena in July (immediately after harvesting), the governor, Ferrante Estense Tassoni, wrote to the Duke of Ferrara that 'this year but a third of last year's crop of wheat will be harvested', and suggested that the

news should not be spread until absolutely necessary 'in order to avoid further frightening people' (cit. in Basini, 1970: 67–8, our translation). The situation was particularly serious, because, given the extent of the famine over a vast geographical area, it would be difficult to obtain grain from the usual sources – while the previous year the authorities in Bologna had found this easy. This was an even greater cause for concern locally as even in normal years, Modena had to import about a third of its cereal requirements (Basini, 1970: 58). Later it became clear that the grape harvest, too, would disappoint expectations and that therefore there would be a shortage of wine, the second basic component, together with bread, of food rations in the Early Modern Age.

It was not until the following year, however, that the real crisis began, not because the harvest was even more meagre, but because reserve stocks had run out and Modena was already seriously in debt on account of having purchased wheat from abroad,²⁹ just like many other cities and states. The Grand Dukes of Tuscany, the Dukes of Mantua and the Republic of Genoa incurred huge expenses in order to obtain supplies of wheat from the Baltic, while Palermo turned to English merchants (Braudel and Romano, 1951; Corradi, 1973; Costantini, 1978; Romani, 1983). In a dramatic escalation, the situation further deteriorated in 1592; it is easy to imagine what it must have meant to harvest in three years what was normally obtained in just one.³⁰ The situation was further exacerbated by the outbreak of epidemics of petechial typhus (for example, in Bologna, Piacenza, Faenza, Modena, Reggio, Parma, Ferrara, Mantua, but also in Veneto, Tuscany and Latium). For Modena, 1593 was also a year of bad harvests, but in most of the north of Italy the situation had changed, and it was easier to find food and in particular grain.

To appreciate the significance of the famine, which was probably most serious in northern Italy, refer to Figures 2.2 and 2.3, constructed as before and taking as terms of reference, respectively, an average fall in birth rate of about 44 per cent,³¹ and an average increase in burials of 100 per cent. In the case of burials, it would have been possible to employ more traditional methods of analysis, but in order to be homogeneous I preferred to proceed as for baptisms.³²

The figures, and in particular Figure 2.2 that shows a higher number of cases, are a clear illustration of the territorial extent and the severity of the famine. In those years, obtaining supplies of grain in Italy must have seemed well nigh impossible, a sort of nightmare for the food-provisioning authorities. The situation is even more striking if we consider that in the area where darker marks prevail, there is at least a 22 per cent reduction in births, which, however, at a local level was often far more serious: the average is 45.5 per cent, with peaks nearing 80 per cent. If births are the most sensitive indicator of the presence of a famine, the crisis of the 1590s shows also an exceptional mortality, resulting in the depopulation of huge areas. This can be deduced both from the trend in burials (consider the relative frequency in Figure 2.3 of the locations where the increase in burials at the

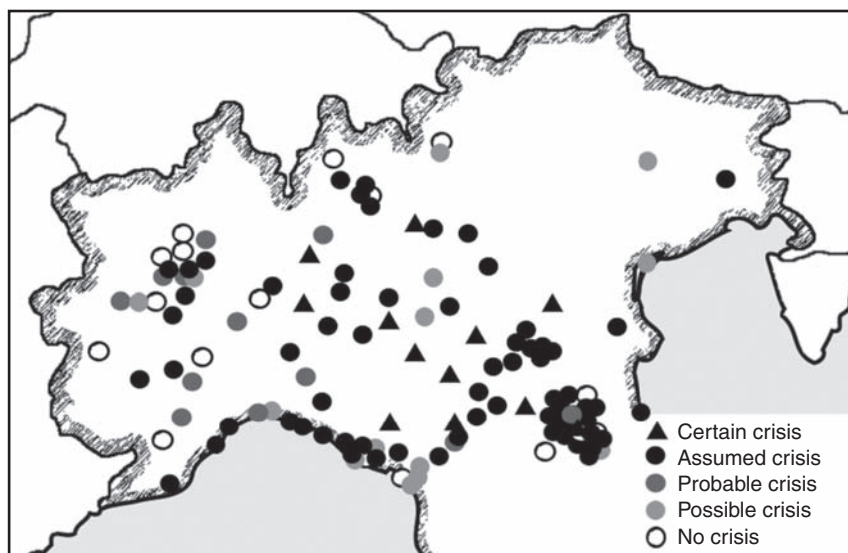


Figure 2.2 Famine in the 1590s: the decline in births

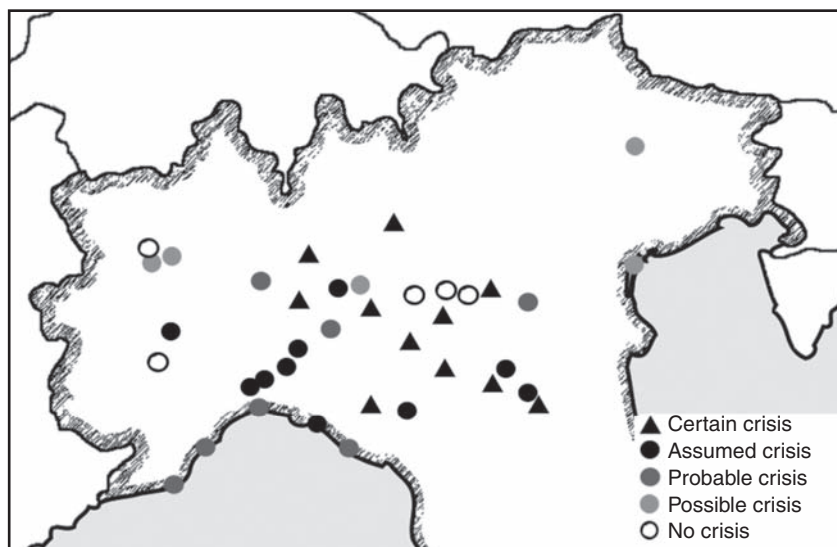


Figure 2.3 Famine in the 1590s: the increase in burials

height of the crisis was 100 per cent or more), and from the trend in population as a whole in areas that have been the subject of specific studies. For example, in Bologna between 1587 and 1595, there was an 18 per cent drop in the overall population in the city, a 21 per cent drop in the suburbs and one of 13 per cent in the rest of the diocese (Bellettini, 1961, and 1987: 56). An equally striking decline in population has been found for Parma and its *contado*³³ (Romani, 1983: 1321), while a considerable increase in mortality is recorded in Milan, in Venice and in other cities (Del Panta, 1980: 148–9). In some cases, like Carpi and Sabbioneta, the famine seems to have caused a drastic drop in the population (around 30 to 40 per cent), although only in part due to an increased mortality since this was accompanied by substantial flows of permanent migration from the cities. In the last two cases mentioned, it was the loss of the privileged status as capital that made the city less attractive and more vulnerable, given the absence of a court. The famine provided an opportunity to overcome psychological resistance to migration and to move to places where there were more favourable expectations.³⁴ Conversely, migratory phenomena caused by the crisis determined the sizeable increase in population in some cereal-producing communities, for example at Revere and Gonzaga in the area of Mantua (+62 per cent and +45 per cent, respectively, between 1589 and 1593; Corritore, 1996: 189).³⁵ In fact, Figure 2.3 suggests that at least part of the countryside in the area of Mantua and of Cremona was affected in a relatively mild way by the crisis, which did not cause a significant increase in mortality.

In comparison with the famines in the first half of the century, the great famine at the end of the sixteenth century presents a geographical distribution that is not only wider, but is also more homogeneous and coherent. Basically, this is due to the fact that its causes were essentially climatic (without then a decisive concomitance of Plague and War) and affected the entire territory. Looking at the figures, and except for what has already been pointed out for the area of Mantua, the locations spared by the crisis (marked by white circles in Figures 2.2 and 2.3) are concentrated around the boundaries of the Po Valley, along the Alps and in some areas of the Ligurian Apennines. Almost invariably they are mountain valleys or villages on the mountain slopes, with an average altitude of 398 metres above sea level, which increases to 463 metres if Liguria is excluded.

The geographical position explains why these places were unscathed by the crisis: the relationship between the mountain populations (or, in any case, the populations that could benefit from easy access to the resources of the mountains) and the territory is quite different from that of the populations on the plain, and is characterized by a lower density of inhabitants and by the cultivation of different types of crops (Mathieu, 2009). This second factor is crucial, as the 1590–93 crisis was essentially a grain crisis. The mountain dwellers, as their food was based far more on animal husbandry, milk products and pulses than that of the plain dwellers, obviously were

less affected by cereal shortages. Besides, the importance of the cultivation of trees typical of the lower and middle slopes of the mountains is not to be overlooked, for instance chestnuts, resistant to adverse climatic factors and rich in fruit with large quantities of calories and vitamins. Since the beginning of the sixteenth century in many Prealpine areas, for example in Piedmont, chestnut woods had been rapidly spreading, with the full support of the authorities (Pitte, 1986: 95–105). It would appear to be no coincidence that in certain areas of the Ligurian Apennines, new chestnut woods were planted in the years following 1590 by the peasant farmers fleeing from the overcrowded areas of the Republic of Genoa (for example, the woods of Ovada; Moreno, 1973; Moreno and De Maestri, 1975). In the same years, chestnut woods were already one of the main resources of the mountain area near Modena (Cattini, 2008a).

While the Apennine, Alpine and Prealpine territories of the centre-north of Italy were largely spared the famine, unlike some of the mountainous areas of the centre and the south (for example, north-eastern Sicily, which was more dependent on wheat harvests than the surrounding plains, or the mountains of the Marches; Aymard, 1975: 212; Sori, 2005: 19), the crisis seems to have been most serious in the heart of the cereal-growing area of the Po Valley. Here, at that time, some of the largest cities in Europe procured their basic foodstuffs thanks to the very close and long-standing commercial, economic and social contacts with their *contadi* and other rural areas nearby. So, it could be said, for example, that ‘the Lomellina is the granary of Milan’ (Aleati and Cipolla, 1958: 385, our translation).³⁶

In the urban centres of northern Italy the food shortage plummeted to unheard of levels. In Pavia in 1592, the price of a sack of wheat reached 720 soldi, the highest price for three centuries (Zanetti, 1964: 93). In Modena it reached an unprecedented peak in 1591 at 390 soldi a bushel (Basini, 1970). As in the case of the siege of Sancerre, in these incidences of extreme hunger, price is no longer a valid indicator of the possibility of acquiring food in the city, because the basic problem is the provisioning of food, which is rationed and mainly distributed free of charge or very much below cost. Moreover, any private stocks *in loco* were quickly confiscated (in Bologna, already on 1 September 1590; Polverini Fosi, 1985: 177), to be redistributed by public authorities off the market. This was a measure that could give only temporary relief, as the problem very soon became one of acquiring wheat elsewhere, as far as this was possible for the local authorities. Once again in Modena, in 1593 the desperate community no longer begged the duke to allow them a loan to purchase wheat, but invited him to obtain food directly: ‘Continuing the third miserable year and perhaps worse than the past, we beg Your Highness to provide your city with the quality and quantity of grain that is sufficient to feed your extremely devoted people and with the best possible conditions, the community offering to pay the agreed prices [...], because there are supplies of bread for the people for no

more than eight days, we beg you to give prompt assistance so that no disorder occurs' (cit. in Basini, 1970: 72, our translation). The city will cover the expenses when it can but the wheat is required immediately to prevent a deterioration in the situation.

Even though, as has recently been affirmed, poverty and hunger are only one of the causes, and not the principal one, of the popular revolts in the Late Middle Ages (Cohn, 2006) – a situation that in the Early Modern Age would gradually change – unquestionably in periods of famine the crime rate and the general tendency to resort to violence escalated. The expulsion of the poor and the useless mouths was justified not only by the desperate attempt to keep citizens and the 'useful' alive (with an implicit calculation in terms of the defence of human capital and of the potentiality for recovery after the crisis), but was also a measure taken to maintain public order. The poor were expelled from Bologna in 1590, while in Naples students and *forestieri* ('foreigners' without citizenship, see Chapter 1) were driven out of the town (Vizzani, 1608; Corradi, 1973). In 1591, the *forestieri* with neither skills nor an occupation and the poor *forestieri* were expelled from the whole of the Duchy of Mantua, while the poor *terrieri*, native of the Duchy, were interned in hospitals or were press-ganged into forced labour (Belfanti, 1982: 107–9). Even in less important centres, like Codogno in the area of Lodi, the throngs of the hungry (in this case coming from the mountains above Piacenza), driven by hunger to the town in search of assistance, posed a serious problem (Roveda, 1985: 36–7). The medieval Christian ideal of poverty as the model of a lifestyle, which had for a long time fostered an assistance ideology, now wears thin in this century in which the poor are ever more numerous, suspect and marginalized (Gutton, 1977; Pullan, 1978, 1992; Giusberti, 1980, 1984; Woolf, 1988). Famine triggers brutally the conviction that the poor, even when assisted, must anyway be confined to clearly limited and well-defined spaces and supervised by specific institutions (hospitals, charitable institutions, almshouses) so that they cannot riot or create other disturbances. The shortage, moreover, leads to making choices that it would be wrong to define as ethically doubtful, as they are rather the logical result of a complex system of different juridical statuses that motivates a preference for the urban poor (even though useless) rather than the country folk who came to the city in search of help. Thus the chronicler Pompeo Vizzani relates that in Bologna in 1590, the first year of the famine,

the *Reggimento* [the city government] wanting to provide for the needs of the poor, ordered that the peasants, who in large numbers came begging in the city be sent outside; and that every day in different parts of the surroundings of the city four ounces of rice be handed out to each of them, so that they could be protected from hunger until spring arrived, and then had the very poorest of the city listed for them by the curates of the parishes, and having prepared a list of up to ten thousand, took the

decision to support them with great piety for eight months, that is until the next harvest [...]; and similarly ordered that infinite numbers of the needy, who due to the hardships endured and to hunger, had fallen ill and were weak, be assembled and cared for with an increase in an infinite number of beds not only in the hospitals where they already previously were wont to look after the sick, but also in those appointed to house pilgrims and in many others. (Vizzani, 1608: 138–9, our translation)

Vizzani, who supported the group governing Bologna, offers us a substantially favourable picture of the city's public assistance,³⁷ probably somewhat exaggerated considering that the daily ration of four ounces of rice seems rather generous. Indeed, the real effectiveness of public assistance is also to be assessed in the light of other information supplied by the same author, who claimed that during the famine 'ten thousand of the needy' died in the city of Bologna and 'more than thirty thousand peasants in all the *contado*, even in the fields' (Vizzani, 1608: 139–40, our translation).

The higher number of deaths recorded in the *contado* is not only true for the area of Bologna, but rather the norm found also, for example, in Parma (Romani, 1975). Not only does it depend on the fact that the population of the *contado* usually exceeded that of the city of reference, but is also a symptom of a higher mortality rate, mainly due to the fact that those who lived in the country were soon cut off from a system of food provisioning and public assistance based on urban institutions. Cities have always favoured their own citizens, and sometimes not even all of them, an attitude worth pondering also in the light of the entitlement approach to famines.³⁸ What is more, in this exceptional situation, the 'natural' distribution of food supplies is reversed: it is no longer the country that supports the city dwellers, but the country folk who look to the city as a place of (relative) abundance. Their hopes, vain given the real scarcity of food and the defensive attitude of the city authorities, are sustained by rumours and by a kind of 'mythology of abundance'. Hence, in the scenario reconstructed by Camporesi (1981), the peasant in Emilia sees Lombardy almost as a kind of Garden of Eden, and flees there in search of relief from hunger, but normally the situation in Lombardy is no better than that in Emilia, and often, while the peasants from Emilia are migrating towards Lombardy, the Lombard peasants are fleeing towards the south, driven, too, by their own mirage of abundance.

The literary sources used by Camporesi, although they should be treated with caution and are purely indicative, reflect the actual mass movements of rural populations, left totally deprived of both resources and protection because of the double failure of crops and of institutions. These movements show, from generation to generation, the repetition of the same mistake, or rather, in the absence of any alternative option, the hungry peasants are influenced each time by auto-suggestion to such an extent that they can see signs of hope where there are none. Already during the famine of 1539,

the inhabitants of the countryside round Modena 'departed with all their belongings and their families and went to Lombardy and most of them to Pavia because they say they give *gnocchi* with lots of cheese, spices and butter, provide work in May and furthermore they say that their vineyards are tied up with yellow sausages' (Tommasino de' Bianchi, cit. in Basini, 1970: 14, our translation). This was a common phenomenon in Europe between the Middle Ages and the Early Modern era. An earlier example is from 1347 in Navarre when the poor peasants migrated *en masse* towards the cities where, before the gates, finding neither a welcome nor assistance, they perished; the survivors were cut down by the plague, which broke out the following year, without being able to return to their homes (Berthe, 1984). If the state authorities dislike the country folk thronging their cities, neither do they appreciate their exodus, both because of a risk that there will be insufficient labour to carry out essential work, and because when the peasants flee 'the trouble is that they take away the animals and other belongings of their masters' (*Gridario Estense*, cit. in Basini, 1970: 14, our translation). It is not only the property owners who are damaged but also the creditors, as among the fugitives there are many sharecroppers and farm labourers who, badly in debt, see flight as an attempt to free themselves from their intolerable financial burdens. In this case, choices due to desperation are not *per se* irrational.

In flight from their lands and their homes, the hungry peasants and the poor became easy prey to armed bands of brigands and robbers, and themselves sometimes opted to resort to pillaging, theft and violence to obtain what was necessary for survival. If in the cities the authorities made an effort to maintain at least a semblance of order³⁹ (also restricting the number of the poor present within the walls and anyway confining them within clearly defined and supervised areas), in the country during the most serious famines civil and criminal laws were practically suspended and violence and abuse tended to prevail. This was certainly the case during the dramatic conjuncture in the 1590s when, according to the account of Girolamo da Perugia, the Abbot of Montecassino, Romagna, the Marches and the region around Naples were overrun by bandits, to whom soldiers and militias (themselves not overfed) gave a hand, rather than combating them. In the environs of his abbey alone, there were said to be about two hundred men, grouped in various armed bands (Girolamo da Perugia, cit. in Corradi, 1973: 667). On the Venetian mainland, the gloomy agricultural situation caused a noticeable increase in thefts and robberies, the work of desperate men attacking 'the houses of various people during the night, in masks and with false beards' (Povolo, 1986: 51, our translation) and aggravating a situation already complicated, since the end of the 1580s, by the increase in organized brigandage (Ortalli, 1986).⁴⁰ In the pontifical state, the criminal court of Rome had to deal with a growing number of trials of bandits and of those conniving with them, a situation that in 1592 had

already become unmanageable. In fact, famine had made joining a band a definite and desirable option for many (Polverini Fosi, 1985).⁴¹ In Abruzzo (the northernmost area of the Kingdom of Naples), hunger brought new life to the band of the much feared bandit Marco Sciarra, with its thousand or so well-organized men and with the backing of part of the nobility of Aquila and Teramo, who supported him as a move against the Spanish. Sciarra was in the end defeated but only when, in 1590–92, a 4000-strong army was sent to the area from Naples, taking concerted action with troops from the Papal State (Kamen, 1976: 379; Sabatini, 2000: 272–3). These, however, are only some examples of a widespread violence caused by the crisis.

The famine in rural areas: the case of Nonantola

The sources mentioned so far, even though adequate to stress the extreme severity of the famine in rural areas, present it inevitably from the point of view of urban dwellers. Just as the direct observers mentioned so far are from the city, so the monographs dealing with the food problems of the past mostly focus on urban centres. This is partly due to the possibility of making use of richer archives and of documents, like those related to the *ammone* (the food-provisioning authorities), which are very rare in rural areas. It is worthwhile, therefore, turning our attention directly to the countryside, starting from a case that I have had the opportunity to study directly: the community of Nonantola, a few kilometres from Modena. It will also be an opportunity to study in greater detail the demographic and social dynamics at work during the famine.

If in many ways Nonantola is a typical, average- to large-sized rural community (3439 inhabitants in 1629),⁴² for others it stands out as an exceptional case on account of its extensive common lands (whose use was gradually restricted to a specific section of the population) that today make up one of the few surviving *Partecipanze agrarie*.⁴³ The turning point in the constitution of the Partecipanza of Nonantola was in 1584 when the books relating to the *Bocca viva*⁴⁴ were closed, an event whose social consequences were only just beginning to be felt in the 1590s, but whose economic significance was clear because a system was introduced that sanctioned the inheritance of rights to use the common land, but at the same time limited it to the 'original inhabitants' (Alfani, 2007a, 2009b, forthcoming).

It is possible to assume that access to these common lands, which originally were '*silvas, pascua et paludes*' ('woods, pastures and marshes'),⁴⁵ useful for integrating crops with typical products of silviculture and animal husbandry, during the cereal crisis would help to provide protection for the community, or at least the group that benefited from those resources. In fact, as I show elsewhere, if it is true that the presence of those semi-common lands was for a long time an incentive to immigrate to Nonantola (the closing of the books can be explained as a 'defensive' measure towards newcomers),

it does not seem that the presence of these lands provided any comparative advantage during the crisis of the 1590s, neither for the population as a whole, nor for the privileged groups (Alfani, 2011c). In the case of other communities where also a *Partecipanza agraria* (Agrarian Participationship) was located, and especially that of Cento, it has been shown that the presence of semi-common lands, together with the *incolato* clause that restricted the exercise of the right to utilize them to residence within the territory of the community, led in time to a greater population density (Del Panta et al., 1999). It is easy to interpret this process from a Malthusian perspective: an overabundance of resources in the short term rapidly results in an increase in population in the long term, which actually cancels out any eventual benefit.

It is a fact that at Nonantola the growth in population after the end of the Italian Wars had been even more impressive than the average growth in northern Italy, or even compared just with the rural areas of Emilia (Alfani, 2011c). It is probably not coincidental that the crisis due to the famine was itself more marked. If, as will be recalled, in the two-year period of 1591–92 in north Italy the births fell by 45.5 per cent on average compared with the previous five years, in Nonantola they actually fell by 65 per cent. Even more striking is the trend in the mortality rate: there was more than a threefold increase (+346 per cent), with a peak of 200 burials in 1591, which corresponds to a mortality rate of more than 60 per 1000. The mortality, still high the following year, began to drop in 1593, but rose again in 1594 when, with 119 burials, it reached the second highest level for the period. This is an indication that, if in the city the efforts of the food-provisioning authorities were gradually re-establishing the social and economic order, in rural areas the situation remained extremely precarious. For the whole of the lowlands around Modena, 1594 was anyway a year of serious crisis (Cattini, 1988b). During the Early Modern era in Nonantola, only the plague epidemics caused more severe mortality crises (even though they lasted for a much shorter period), with an apex reached during the pandemic of 1630, when the mortality rate was close to 260 per 1000.

Examining the monthly distribution of the burials in the period 1591–94,⁴⁶ as represented in Figure 2.4, the absolute maximum is found in May 1591. As already mentioned, this is the year when hunger claimed the highest number of victims, even though migration and vagrancy, which in desperation part of the population of Nonantola were driven to, makes it difficult to compare the number of deaths with the resident population in each period. What appears certain, however, is that the particularly acute phase experienced in 1591 exhausted any remaining capacity of the local agricultural and socioeconomic system to cushion the fluctuations in the supplies of food. In fact, in the next three years, the mortality pattern inexorably followed the cycle of the harvests. Thus burials tended to peak in the months

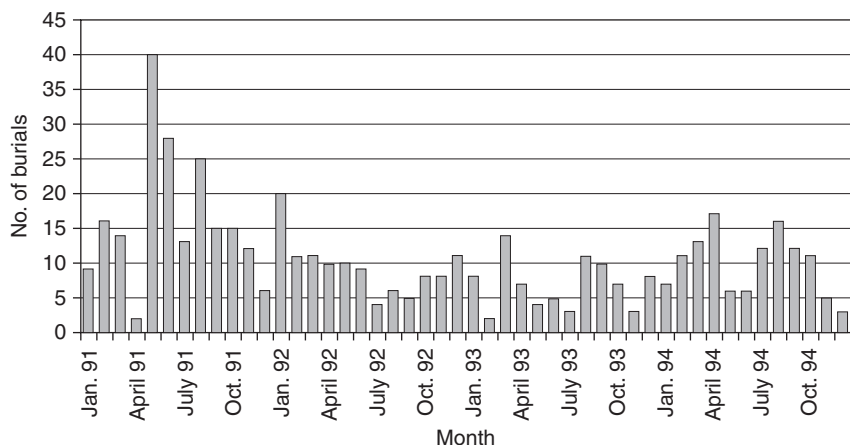


Figure 2.4 Monthly burials in Nonantola, January 1591–December 1594

Source: Parish Archive of San Michele of Nonantola, *Registers of Burials, 1574–1678*.

immediately prior to the wheat harvest (June) that, however scant, brought some relief, at least for a few months,⁴⁷ and it is an acknowledged fact that apparent abundance, together with the psychological fragility caused by prolonged hunger, encourages the squandering of what should instead be carefully rationed, both to provide seed for the next harvest and to cope with food requirements in the winter and spring months. The two mortality peaks found in 1594, when an early decline in burials between May and June was followed by a renewal with a peak in September, could have been caused by the outbreak of an epidemic, for example typhus, of which, however, it has not yet been possible to find any documentary evidence.

The pattern of burials does not simply record the demographic trends of the community, nor is it a mere reflection of the cycle of supplies and harvests. Rather, it is a sign of the breakdown of a complex demographic, economic and social system, whose individual components are closely inter-related. Thus, an increase in deaths is a sign of harvest failures and of stocks running out, but it is also the result of the failure of state and community safety nets providing assistance and solidarity. It also reflects an increase in violence fomented as much by suspicion and envy towards neighbours as by the presence of brigands and vagrants, who seem to be lying in wait in the immediate vicinity of the inhabited area of the community, or on the boundaries of its lands, waiting for any opportunity to seize part of its meagre supplies.

The books of the *Capitano di Ragione* of Nonantola record a definite increase in crime, at all levels, from petty thefts between neighbours to

murder.⁴⁸ Taking as an example the winter period of January–February 1562, we read:

8 January 1592: Doves stolen from a dovecot.

16 January: A man found dead in a ditch.

6 February: Complaints because Gaspere Zobolo and *messer* (sir) Francesco Apparuto were carrying out acts of possession (measuring lands, putting *palesse* or 'poles' in the ground ...) on land sown with wheat by *magnificus dominus* (magnificent sir) Vencislao Cipriano and his wife, who claimed that the real boundaries were well known.

11 February: Battista de Barellis wounded by Genesio Zavatino who hit him over the head with a harquebus.

12 February: Theft of hens and various goods.

12 February: Another theft of foodstuffs and various goods.

13 February: Theft of hay and various goods.

21 February: An exchange of threats between armed men over the upkeep of two oxen.

25 February: Thomaso di Consettis filed a complaint because his sharecropper Bastiano Mattiolo made off with two of his cows and sold them.

29 February: Another dispute between armed men, but without consequences.

Revolving round food supplies, small or large animals (pigeons, hens, cows, oxen) and cultivated fields, it is clear that these incidents of petty crime and friction between neighbours are fomented by hunger or by the fear of having to endure it. In other words, we are up against a situation in which extreme hunger leads to the suspension of the customary networks of solidarity and mutual support, which in ordinary circumstances has always been the strength of peasant communities, to such an extent that Nonantola becomes a battleground for armed bands and its countryside a kind of no man's land in which it is dangerous to venture without taking precautions. If the episodes mentioned reflect a situation of 'normal' insecurity, they are nothing in comparison with those situations where disoriented and desperate men are ready to go to any lengths, even torture and murder, to obtain a little food. In March 1591, for example, Marchino Borsari was attacked in his home by a gang of men, one of whom was armed with a harquebus; he was wounded in his shoulder with a pitchfork, beaten up and cruelly tortured and robbed of all his possessions, including foodstuffs. This is the statement that he made:

Last Thursday night, when it had already struck seven o'clock, I and my wife being asleep in this bed, I heard a whistle at a window [...] I immediately jumped out of bed to see what it was [...] and dressing myself as best I could with this blanket you can see, I encountered one armed with a wheel harquebus and a sword, who attacked me and straight away

another unarmed man arrived, who took a pitch fork that was there and thrust it into my shoulder and passed as far as the bone, and all of a sudden two others arrived unarmed and jumped on me and tied my arms behind my back, and then with a thin rope tied me up by my testicles, attached the rope to the iron that you see attached to the beam [...] above here, and tormenting me for a long time demanded money, and when I told them I had none they replied that they knew my affairs better than I did, and so taking [some] of my sacks they took away wheat flour for three measures, which I had in a trunk, more than forty unbaked loaves of grain [...] and also a harquebus and a silver ring with a red stone [...] twenty-four salamis [...].⁴⁹

The case of Marchino is only one of many. In those years there were numerous reports of armed bands sneaking into houses and farms in the country, especially isolated ones. Usually the threat of violence was enough to induce the victims to hand over a little food, and often from their statements emerges, if not a feeling of solidarity, at least a certain understanding of the reasons behind the actions of these desperate men.⁵⁰ The judiciary found it difficult to maintain order, and if the hope that the four executed in the square on 11 March 1591 were to be a warning,⁵¹ they were grossly mistaken, as the incident reported on 18 March and quoted above demonstrates. In fact, the principal threat came from outside the community.

What transpires from the situation in Nonantola is not only a complete breakdown in the institutions, but also in the very *modus vivendi* or life-style of the community. This can be considered typical of conditions in rural areas in Italy during the famine. When after 1594 it ended (even though shortages remained in many Italian areas for some time to come), the population began to increase once more, filling in the gaps created by hunger and the typhus epidemics remarkably quickly. As I will argue later on, the ability to recover population losses can be seen also as a sign of the healthy condition of the economies of the Peninsula. The socioeconomic breakdown caused by the famine had, however, lasting effects, and not only in creating irremediable breaches between various elements of the community, unable in the coming years to trust one another as they had done previously. Not far from Nonantola, at San Felice sul Panaro, famine had impoverished many families, who were forced to sell their lands (and had consequently been obliged to accept an inevitable social downgrading) to the benefit of a few families, principally *forestieri* from Modena, well provided with cereals and cash. I will have the opportunity to return to the depressing phenomenon of this buying-up of the land. The growing concentration of the ownership of land in the hands of a small group of families is a further factor of social disintegration, followed by an increasing political and institutional closure within the community, with the old eminent families, now impoverished, in search of any means of maintaining

their prestige, despite the economic downgrading to which they had already succumbed (Cattini, 1988b).

Provisioning of cereals, *annone* and the bread market: successes, difficulties and institutional failures

The great famine of the 1590s can be interpreted as a typically Malthusian crisis. After a 35-year period of extremely rapid growth, the demographic pressure on resources was such that a few consecutive years of poor and sometimes extremely poor harvests caused the collapse of the whole system, in all its demographic, institutional, economic, social and cultural elements. This interpretation, now 'traditional' for Italian historiography (Romani, 1975, 1983; Cattini, 1984), can still be considered valid, with the already mentioned distinctions, such as the different demographic (and economic) behaviour in most of the mountain areas. It should, though, be pointed out that there is no lack of different opinions emphasizing that, on a European level, the famine was due to a particularly hostile climatic cycle. This implies that the cause was fortuitous, and not a demonstration of any Malthusian positive check (Souden, 1985). However, at least in Italy, the exceptional severity of the famine is only partly due to meteorological factors, as it is also linked to a precarious equilibrium between population and resources beginning some years prior to the crisis and destined to present itself once more shortly after the end of the famine (Alfani, 2007b, 2010a). From this perspective, the Malthusian interpretation – albeit enhanced by the consideration of institutional and sociocultural aspects – is still applicable. In fact, once the crisis was over, the population began to increase rapidly, eventually reaching the levels of the 1580s. Significantly, already at the beginning of the seventeenth century shortages reappeared, becoming from the 1620s onwards a sort of creeping crisis:⁵² a sign that the population had reached a ceiling that was difficult to surmount. To solve the imbalance, in 1629–31, another typical Malthusian positive check, the plague, appeared. I will come back to this later.

The series of wheat prices enable us to consider the food crises that occurred in the 'long' sixteenth century between the arrival of Charles VIII in 1494 and the plague of 1630 in a single diagram, which documents at the same time the cyclical failure of harvests that no generation, it seems, was wholly spared, and the long-term increase in prices, inflated by growing quantities of American gold and silver being transferred to Europe, by the increase in demand for coinage, and by a drop in the price of minting money with a low denomination for everyday use, the *moneta bassa* made of *biglione*, an alloy of copper and silver (Boldizzoni, 2005; Cattini, 2008b: 191–4). Figure 2.5 shows some typical series of wheat prices.

No account of the famines that occurred in the Early Modern era could be called complete without some mention of the conditions of the urban

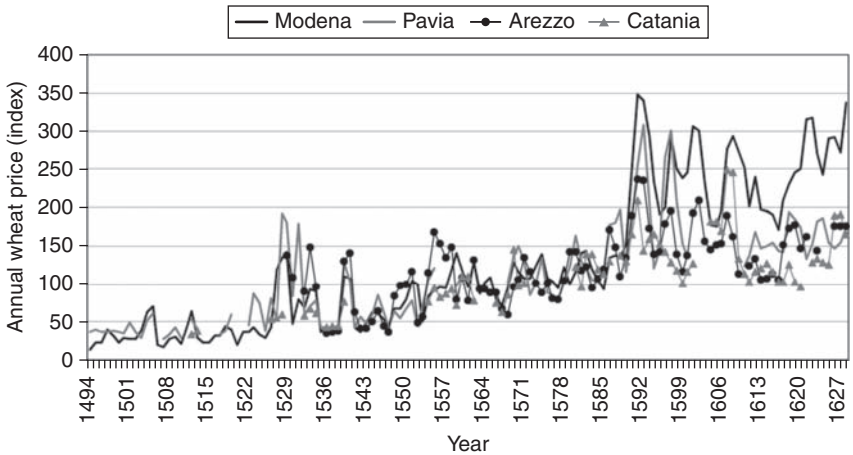


Figure 2.5 Annual wheat prices on Italian urban markets, 1494–1628 (indexes, base 100 = average 1545–85)^a

Note: (a) The substitution of the actual series with index numbers has made it possible to compare prices related to different amounts of wheat.

Source: The series are taken from Fanfani (1940), Petino (1949), Zanetti (1964) and Basini (1970).

grain market, the distribution of supplies and the institutions appointed to guarantee the supplies of foodstuffs (*in primis*, the municipal magistrates of the *annona* responsible for administering food). Since antiquity, feeding the large cities that rose around the coasts of the Mediterranean (which, as already noted, meant not only keeping them healthy, but also tranquil and loyal to those who governed them) presented considerable logistical problems and required the early establishment of offices responsible for provisioning. Similar problems led to similar solutions, as recent comparative studies have clearly shown (Marin and Virilouvet, 2003), and on a closer inspection, the circulation of grain in Europe has always depended, at least partly, on integrated international operations over a vast area. This was the only means of entertaining any hopes of obtaining resources when adverse weather conditions compromised harvests in whole regions (Braudel, 1977).⁵³ In the sixteenth century, the rules and the principal players in these operations were gradually changing. The Ottoman Empire's expansion westwards drastically reduced and at a certain point completely interrupted the traditional flow of grain from the Black Sea, which had been mainly managed by Italian merchants. At the same time, the importance of grain coming from the plains round the Baltic Sea, and particularly from Poland, grew. This was a trade increasingly controlled by English and Dutch merchants (Romano, 1962; Aymard, 1966; Grendi, 1971). This new situation not only called for new players, but also for new strategic centres: in Italy, Leghorn, in rapid expansion and destined to become the great grain port of

Tuscany, and therefore the main port in the region (Braudel and Romano, 1951).

Locally, however, and with the exception of periods of more serious crisis, urban authorities and provisioning institutions (for example, the *Magistrati dell'Abbondanza*, or 'Magistrates of the Abundance') looked to the surrounding area, the *contado*, as the first, and usually the main,⁵⁴ source of provisions. Asserting their right to a primacy based on ancient medieval traditions, the *annone* aimed to establish a real monopoly over 'their' rural areas and to control as far as possible flows of foodstuffs entering and leaving the territory. This control was not limited to wheat and other grain, but tended to cover all basic foodstuffs. Moreover, the regulations not only concerned the control of prices listed in the *calmiere*,⁵⁵ established periodically on the basis of prices actually determined on the urban market by the meeting of supply and demand (except in times of crisis, when the *calmiere* had to take into account the resources that the poorest had at their disposal; De Maddalena, 1949),⁵⁶ but also aimed at overseeing the actual flows (Guenzi, 1995; Strangio, 1998). Even in Lombardy, which in normal years in the sixteenth century was able to export large quantities of *surplus* produce, it was necessary to be on the alert to prevent producers and merchants resorting to hoarding supplies and to smuggling, 'artificially' creating (whether from negligence or deliberately) a situation of dearth and consequently a potential turmoil in public order (Parziale, 2003). It was a common concern: in Modena, too, the obligation to have all the grain produced in the *contado* brought to the city (having deducted the quota due to the sharecroppers) and the ban on hoarding were systematically ignored. What is more, according to the chronicler Tommasino de' Bianchi, around 1540 the most important officials of the *annona* personally ran the illegal trafficking of wheat (Basini, 1970: 29–30).⁵⁷

It was during the sixteenth century that the control traditionally exercised by the cities on the countryside evolved into more complex forms of organization, the objective being the control of the conditions regulating the availability of food throughout the state territory. This happened, for example, in Florence, Milan and Rome (Delumeau, 1957–59; Pult Quaglia, 1982; Falchi et al., 1995; Palermo and Strangio, 1997; Parziale, 2003, 2009). Even though in many places the new trends were only fully developed in the seventeenth century when the reorganization of offices, rules and institutions was completed, often it was the great famine of 1590–93 that provided the necessary stimulus finally to complete the process of reform. This happened in Bologna, where up to that moment, although the *contado* was unable to guarantee the city sufficient food supplies, 'the political powers had proved incapable of adopting in the sector of provisions administration measures that were not merely a short-term solution' (Guenzi, 1978: 373, our translation). A series of edicts issued in 1593 radically modified the situation, giving the city authorities the means to obtain detailed information

on the conditions of the market at any moment (it was made compulsory to report each contract of the sale of wheat, the amount of bread baked daily and the existing supplies) and to control the quality and quantity of bread production. Similarly, in the State of Milan, also in 1593, 'notifications' and 'introductions' became a requirement: 'the former [...] registered the state of the harvest, recording quantity, whereas the "introductions" required each owner and tenant to give a specific quota of the harvest to the nearest province, so as to guarantee supplies to the cities. Both these instruments remained substantially unaltered until the Austrian reforms, creating the backbone of the food administration policy for the whole of the Spanish period' (Parziale, 2009: 15, our translation).

The conditions of the bread market in the first centuries of the Early Modern Age have been the subject of specific studies for many Italian cities.⁵⁸ We know far less about other foodstuffs that, as mentioned in the case of Milan, were also subject to increasing controls in the sixteenth century. In the case of Genoa, as well as the *Magistrato dell'Abbondanza* established in 1564, whose main task was to guarantee the city's provision of grain suitable for bread-making, in 1588 the magistracy of the *Provvisori del Vino* (Provisioners of Wine) was introduced and in 1593 that of the *Provvisori dell'Olio* (Provisioners of Oil), all foodstuffs as indispensable as bread (Massa, 2000). It is not just coincidence that the new magistracies appeared at a time close to that of the great famine.

More than the regulation of the bread market, what is interesting here, however, is another typical function of the food-provisioning institutions: the control and management, both direct and indirect, of primary food supplies. These supplies, primarily cereals but also dried pulses and such like, are to be listed among the components of the wealth of each family, not simply because of their intrinsic value but also because during times of bad harvests or famine they provided their owners with a kind of socioeconomic lever (Alfani, 2010d), according to a pattern whose basic features Witold Kula (1976) had already outlined. Despite this, to date historians have tended to disregard them and, as Renzo Corritore (2007) has shown, a variety of contrasting interpretations are to be found in the literature. The reserves would be either an 'investment of fear', that sterilized a part of the wealth making it unproductive (Cipolla, 1974: 68); or they would be a kind of locking up of savings (Zanetti, 1963: 44); or an instrument of the government's economic policy (Cipolla, 1993: 42–3); or an economic requirement that determined the creation of a kind of more or less rational (albeit inegalitarian) reserve fund, a process in which individual owners interacted with public institutions and regulations. The distribution of individual reserves does not only depend on financial means, on the possession of fields and the type of activity, but also on the availability of storage space. In the country, few had a *solaro*, or granary capable of storing considerable quantities of food supplies (Corritore, 2007). In the city, distribution was even more unequal: on the

one hand, it can be estimated that in Italy in the Early Modern Age, about two-thirds of the population of the big urban centres had no stocks at all and had to buy all the bread that they needed, or depended on payment in kind for services to some eminent family (Mattozzi et al., 1983; Grendi, 1986; Corritore, 2000). On the other hand, a small number of privileged individuals kept enormous quantities of foodstuffs, often in defiance of the anti-profiteering laws in force (Corritore, 2007). For example, in Pavia at the end of the sixteenth century, 40 per cent of all the grain to be found in the city was stored in the *solari* of about sixty families (Zanetti, 1964, pp. 70–7).

In a case study that I carried out – that of Ivrea in Piedmont – in a census of November 1613,⁵⁹ it was found that only 101 heads of households (10.8 per cent of the total) declared that they possessed some sacks of grain or pulses or some *stara* (barrels) of wine, and of these 28 declared that they possessed only wine. The control of reserves did not depend on whether one worked in the town or in the country (only 6 sharecroppers of the 112 mentioned owned a few supplies, while on the contrary six shoemakers out of thirty declared that they possessed supplies, as did all three barbers in the city). Instead, the possession of food stocks seems to have been linked to financial resources and to the ownership of large houses and warehouses; among those who possessed food supplies are numerous notaries, merchants, spice sellers or apothecaries, and gentlemen. Some individuals stand out as owners of an exceptional amount of reserves, like Stefano Testa, for instance, who declared that he had 142 sacks of various kinds of grain, and 98 *stara* of wine. As a rule, however, in Ivrea the individual reserves were limited, both because the city was small and because it was situated near to the Alps, guaranteeing a privileged access to mountain products that, as we have seen, offered valid alternatives during a cereal crisis. It is not mere chance that among the communities in my sample, Ivrea figures as one of those that were spared the famine.

I have already mentioned that being in possession of supplies in times of famine was a socioeconomic leverage, which unscrupulous individuals could use to make money and could profit from in various ways. The hungry mobs rioting in front of bakers suspected of hiding bread and flour, masterfully described by Alessandro Manzoni in his novel *The Betrothed* (the plague of 1630 was preceded by a serious famine), were exactly what the city authorities wanted to avoid at all costs.⁶⁰ However, it has to be said that the collective imagination of the city dwellers, although it was driven by hunger like that of the fleeing peasants attracted by entirely unfounded hopes of plenty, was, though, fuelled by the frequently fraudulent bakers and by real speculation. As the chronicler from Modena, Giambattista Spaccini, noted in 1597, ‘When making bread, bakers are often very cunning; especially when it is hot, they dampen the floor of a room, then lay the bread on it, and consequently it absorbs the humidity so that the weight increases’ (cit. in Basini, 1970: 32, our translation).

Cunning and daily malpractices in violation of regulations during a famine easily turn into suspicion of a worse crime. So, during the crisis of the 1590s, bakers were quite frequently punished for real or alleged crimes. In Bologna, after some of them had been harshly punished on account of the inferior quality and weight of their bread, it was once again possible to find good bread, but only for a very short time on account of the real lack of flour suitable for bread-making (Alessandro Barbieri, cit. in Corradi, 1973: 665). In Mantua, those punished were the starving in revolt. When on 6 October 1590 bread became unavailable, the *popolazzo* (common folk) rioted, threatening to clean out the bakers, and the next day 'at about eight o'clock in the evening, large numbers of folk rioted and broke up a baker's stall, took his bread [...] and in one voice called for an uprising' (Donati, cit. in Belfanti, 1982: 103, our translation). The reaction of the Duke of Mantua, Vincenzo Gonzaga I, was extremely harsh: armed patrols restored order and within three days, 12 people responsible for the uprising were identified, 4 were put to death and the others were sentenced to the torture of the rope. However, to a certain extent, the demands of the rioters were accepted when a special magistracy was established that, similarly to what happened in Bologna, worked alongside the ordinary magistracy, supervising each phase in the process of production, from the harvesting of the wheat in the country to the final distribution of bread in the city. In the course of the crisis, bakers found guilty of producing 'extremely poor quality bread' were tortured and put in the pillory (Belfanti, 1982: 105–11).

By acting in this way, the authorities tried to demonstrate their vigilance, as usually the cause of bread riots is not only hunger (basically considered a fact of life like the unreliability of harvests; Guenzi, 1995: 292), but also the suspicion of injustice. If it is thought that there is bread, but someone is hoarding or removing it from the market, or anyway that the bread available is being unfairly distributed to the advantage of the privileged classes and if it is believed that the institutions appointed both to assure supplies and to prevent abuses are not being effective, then people rebel in search not only of food, but also of justice (Thompson, 1971; Kaplan, 1976; Guenzi, 1979, 1995). Generally speaking, 'the credibility of government choices in the eyes of the population consisted in their ability to guarantee at any time the "right to bread"' (Guenzi, 1984: 68, our translation).

Apart from the bakers who, because their activities were clearly visible to all and sundry and because the stages in the process of bread-making were known, ended up being a magnet for most of the popular wrath, the crisis also aroused the greed of a substantial number of property owners wishing to profit from the situation. An example is the wealthy landowner from Padua, Alvise Cornaro, who, during the famines of the first half of the sixteenth century, greatly extended his lands availing himself of the services as a go-between of his protégé Angelo Beolco, known as *il Ruzante* (The Snorer). The latter immortalized the famine of 1528 in the *Dialogo facetissimo*, performed

(during the famine) in Cornaro's villa. As Piero Camporesi comments: 'While taking for granted the "cruelty" of the times and the harshness of life [...] Cornaro's humour is certainly not to be interpreted as a kind of masochistic self-flagellation, but rather as a smug, exhilarated response to the oppressive sense of anguish of a "benefactor" who, while being in practice a swindler, knew that he was contributing to saving lives' (Camporesi, 1980: 22, our translation). The judgement passed by contemporaries on profiteers, however, tended to be extremely negative. The Lombard short-story writer Giovan Francesco Straparola (1480–1557), is by no means indulgent with his character Andrigetto di Valsabbia (a rich citizen of Como), taken as proof of the truth of the proverb that 'He who lives ill, dies ill.' He accumulated wealth at the expense of the peasants who turned to him in times of famine to implore him for wheat or other grain and found themselves having to surrender their lands ('some gave him a meadow, some a wood, and some a field of ploughed land'⁶¹). Andrigetto, whose 'conscience did not prick him in any way, however distressing his conduct' did not hesitate to swindle openly the desperate peasants, violating the statutes of Como, thanks to the help of an obliging notary, Tonisto Raspante, 'an extremely knowledgeable notary, but [who] in fleecing peasants surpassed all others'.⁶²

If it is true that in times of dearth both of food supplies and of good quality coins of silver or gold (preferred or even demanded by anyone who still had something to sell), peasants and smallholders often managed to survive only thanks to the support of rich speculators, the fact remains that the big landowners systematically profited from the famines to extend their lands (Corazzol, 1979; Romani, 1983; Cattini, 2009). This is a common occurrence during the Early Modern Age, beginning at least with the great famines of the late sixteenth century and continuing during the following two centuries (Kamen, 1976). Emmanuel Le Roy Ladurie, in his famous study on the Languedoc, did not hesitate to define this phenomenon as a kind of *sélection naturelle* that benefited the principal landowners and concentrated land in the hands of a few (Le Roy Ladurie, 1966). In Chapter 4, I will come back to the long-term redistributive effects of the famine in the 1590s, but it is worth recalling again that for the wealthy town dwellers, acquiring land – a famine offered a golden opportunity to do so – did not depend solely on the desire to get rich and to diversify their investments, as it also responded to a need to ensure food security. This need was both economic (a guarantee of access to resources essential for survival) and psycho-cultural (a sense of security, as well as a sign of social prestige), in a society 'structurally exposed to the threat of famines': as a late medieval Florentine saying goes, 'Those who have a house and farm might bend, but do not fall' (Cherubini, 1996: 66 and 67, our translation).

In order to understand the complex relationships existing between the harvest cycle, taxation and public debt, property transactions and dispossession

of smallholders, the model put forward by Marco Cattini (1977) is still valid. The fragility of an economy that risks becoming an easy prey to the caprices of climate is rooted in the cyclical alternation of years of abundant cereal crops, years of scarcity and those of famine. This results in a cycle of the management of the supplies of money and materials that foresees, respectively, in the three situations mentioned: putting surpluses to one side; balancing production against consumption; or deficit of food resources to be covered by resorting to the market offering money. In a normal year of famine,

only the big landowners have sufficient revenues to guarantee the regular continuation of the productive cycle (self-financing) as well as the ability to keep up the customary standard of domestic consumption. [...] Most of the farms, however, will be forced to reduce first of all their stock of seeds; sometimes not even wheat will be sown, in order to integrate the meagre crops available to satisfy unrelenting food requirements. (Cattini, 1977: 176, our translation)

In addition, there are the speculative manoeuvres of the fortunate owners of agricultural surpluses, who artfully causing a further rise in prices, aim to expropriate from small- and medium-sized owners first of all their money and then their land. In the pursuit of this objective, they are helped also by the 'spontaneous' dynamics of supply and demand during and after the crisis.⁶³ These processes are very rapidly accentuated and accelerated in the case of the most disastrous famines – which are not always linked to the years when the harvest is at its worst, but rather occur when a sequence of several years of harvests prove bad or mediocre.

To conclude this description of the effects of famines in general and of the work of the food-provisioning institutions and the government in particular, it is necessary to go back to the cities and ask how the municipal magistracies succeeded in coping with the huge financial commitments needed to manage the crisis. Thanks to some local studies, we learn that the famines, and in particular the extremely serious one in the 1590s, severely tested the finances of cities in Italy. In the case of Modena, it has been estimated that the expenses sustained for provisioning wheat from abroad alone greatly exceeded the enormous sum of 3.5 million lire. At the end of the crisis, the city found itself 'bled white of good currency' used to pay for imported grain, and with an enormous public debt to the duke, to wealthy citizens and to institutions (especially religious ones) that had granted loans (Basini, 1970: 71–4). A similar serious debt is to be found in other Italian cities, for example in Parma, Piacenza, Cremona, Mantua (Basini, 1966: 77; Romani, 1983: 1319–21; Corritore, 1993: 363–4) and in smaller centres. In the case of the latter, it is important to stress the role played by a sudden reduction in income. This was due to the fact that most of the taxpayers had no money

because they had had to top up the repeated deficits in their own harvests by buying food on the market, and so they were unable to pay the due tax. Thus, in Finale in Emilia, the revenue from the *colta ordinaria* (ordinary taxation), collected from those who owned houses and land and were listed in the property tax registers, fell by 14 per cent in 1590 in comparison with the previous year and halved again in 1591 (–54.5 per cent) (Cattini, 1977: 192–3).

If the famine in the 1590s was so serious, one might wonder how the urban economies in Italy managed to survive. We will refer once more to the case of Modena. What certainly contributed to relieving its financial pressure was the intervention of the Este dukes, willing (although half-heartedly) to grant loans to the city, which in 1598 became their capital when Ferrara became part of the Papal States. The deferred payment of the debt, mostly consolidated and expressed in the payment of the annual interest in two six-monthly instalments guaranteed by the revenue from the duties (increased on various occasions) on consumer goods, does not seem enough to solve the difficulties. In fact, it would be impossible to understand the reasons for Modena's recovery without taking into consideration its prosperous economy, *in primis* driven by the development of the silk industry, but also by the export among other goods of wine, brandy and pork sausages (Basini, 1970: 73–4; Cattini, 2001). If we take into consideration that, from a Malthusian perspective, famine is followed by a phase of rapid population growth, which in itself is a stimulus to the economy, we can hazard a guess that although the crisis is a sign of a tension between population and resources (the increase in the production of foodstuffs follows the slow pace of agricultural innovation and the reconversion of crop regimes), it is also a symptom of considerable vivacity and of a notable growth in the overall urban and rural product in the previous years and decades. For the moment, these are mere suggestions; the second half of the book will include them in a general interpretation. First, however, the last of the Horsemen, Plague, remains to be investigated.

3

Plague

Of the Horsemen of the Apocalypse, Plague is certainly the one that has left the deepest mark on collective consciousness and mentalities. Although, for Westerners, the last time that they experienced a great pandemic was almost a century ago (the outbreak of the Spanish flu of 1918–19¹), still the idea of a devastating disease able to bring social and economic systems to a halt, and even able actually to subvert the principles on which human civilization is based, continues to be a recurrent theme in literature and in films. Certainly revived by the growing fear about new pandemic influenzas,² this kind of cultural imprinting has its deepest roots in the plague. It is no mere chance that, at least in Italian, this disease has the same name as the Horseman who represents death caused by any illness, nor that the English term ‘plague’, which strictly speaking indicates an epidemic caused by a specific disease, is also used with the more general meaning of ‘serious epidemic’.

It was the terrible experience of the return³ of the plague to Europe in 1347–48 (in 1347, it had already struck Constantinople and reached Italy at Messina and France at Marseilles; Del Panta, 1980: 111) that caused, first, utter bewilderment in European populations, then a marked readjustment in their way of seeing the world, now even more threatening and uncertain than before, constantly under a sword of Damocles, for which there seemed no explanation, unless it was to be interpreted as divine punishment for man’s many sins. Giovanni Boccaccio’s *Decameron* remains the best example in literature of this state of confusion. In his tales there is a description of a variety of reactions: from a fatalistic resignation to religious remorse or, in stark contrast, unrestrained and sometimes extreme kinds of behaviour. International historiography has a wealth of excellent accounts of this great epidemic, and so it will not be discussed further here.⁴

If the plague that devastated the whole of Italy in 1348–49 was notoriously the worst to have ever struck the continent, it is not equally well known that later epidemics were not only less serious (in the sense that they caused fewer deaths), but gradually took on very different characteristics from the fourteenth-century pandemic. Already around 1360, we encounter the first

cases of 'children's plague', whose main victims seem to have been children (Cohn, 2002: 214–19, and 2010b). Then, during the fifteenth century, the plague acquired a specific social significance, becoming the 'plague of the poor' (Alfani and Cohn, 2007b; Cohn, 2010a, 2010b), thus developing a preference for those who belonged to the more disadvantaged strata of society. As I will argue, this situation clearly modified the potentiality of the illness to cause lasting economic damage. However, in the case of the most serious epidemics, like the Plague of San Carlo in 1575–77 or the seventeenth-century pandemics (1629–31 and 1656–57), this social connotation was partly superseded and the plague once more became a universal disease, or almost so.

The change in the structure of mortality from plague not only had crucial consequences on its capacity to undermine economic and social systems, but as Samuel K. Cohn (2002) has suggested, this development favoured the emergence of a new psychological and cultural climate, which was to lead to the Renaissance.⁵ More important for this study, the evolution of the disease poses a series of questions on its nature and causes. It is necessary to clarify them now, as the etiology of the plague is a key factor in attempting an economic assessment (in terms of costs and benefits) of the involvement of the public health institutions.

The debate on the etiology of the plague and its implications

Today it is generally thought that the pathogenic agent of the plague epidemics that traversed Europe during the Middle Ages and the Early Modern Age was the bacillus identified in 1894 in Hong Kong by one of Pasteur's students, the Swiss doctor Alexandre Yersin, at the end of a scientific competition with rival groups, carried out in significantly inferior conditions. Yersin himself announced that he had discovered not only the bacillus responsible for the epidemics that were then creating serious problems for the European colonial authorities – in general and especially for the British stationed in India, terrified by the prospect that new and rapid naval links would carry the disease to the mother country (in 1900, an epidemic in Glasgow was stopped at an early stage) – but also the source of the Plague of Justinian in the sixth century, of the Black Death in the fourteenth century and of all the later great plagues.⁶ Contemporary mass media were quick to highlight the exceptional news, while biologists applied themselves to clarifying how the disease was transmitted, which was still uncertain. Immersed in this task, biologists took for granted that *Yersinia pestis* was the illness that had devastated Europe at various times, and, according to some (Cohn, 2002), systematically ignored the counter-indications produced by the medical commissions working to contain the epidemics in Asia.

Once understood, the complex ways in which the disease was transmitted provided the press with a new impetus to fill accounts of ancient European

plagues with hordes of filthy parasites: one need only recall Albert Camus' famous description of the plague in Oran (Camus, 1947) to understand how the role played by rats not only excited the reader's imagination, but also offered a wealth of symbolic and metaphorical material. Under normal circumstances, *Yersinia pestis* cannot in fact be transmitted directly from person to person, but requires a go-between (a vector). This depends on the fact that it is not really a human disease but a disease of rodents. Still endemic today in rat populations in certain areas of India and the Himalayas, as well as in the Rocky Mountains and in other sparsely inhabited zones of northern America, *Yersinia pestis* can cause epidemics in rodents and, secondarily, human epidemics. For this transmission to take place, there has to be a vector: the flea. Biting a rat or some other infected rodent, the flea swallows the bacilli of *Yersinia pestis*, which rapidly form a culture that blocks an essential part of the insect's digestive system, the proventriculus, preventing the flea from feeding. The hungry flea becomes extremely mordacious, and, on the death of its host, has to be satisfied with food it would normally shun: humans. The flea of rodents, in fact, is different from the human flea; the *Xenopsilla cheopis*, in particular, a typical parasite of the *Rattus rattus* (the black rat that lives in proximity with humans), is the species of flea most suited to transmitting the disease.⁷ When it bites people, the flea regurgitates the bacillus of *Yersinia pestis* into the blood stream, infecting it (Del Panta, 1980; Cosmacini, 1988).

The best known symptom of the disease are buboes, painful swellings of the lymphatic glands, hence the definition 'bubonic plague'. As well as the swellings, other symptoms of *Yersinia pestis* are a high temperature, a comatose state and the inflammation of internal organs. It is estimated that if it is not treated with modern medicines, the lethality rate is between 60 and 85 per cent (Del Panta, 1980: 37).⁸ Sometimes the disease can cause secondary pneumonia and can become 'pneumonic plague'. In this case, as well as having a lethality rate above 99 per cent, the disease can be transmitted from person to person by particles of saliva dispersed in the air by coughing or sneezing.

After the bacillus was identified in 1894, it was to take several decades before the complex mechanisms that regulate the transmission of the *Yersinia pestis* were fully understood.⁹ As this story has already been analysed in detail by others (Mollaret and Brossolet, 1985; Cohn, 2002), I will merely mention some of the results of this research when they are relevant to my arguments. It is crucial, instead, to recall some problems arising from the identification of the plague of the past (which from now onwards, for the sake of simplicity, I will call 'historical plague') with the disease caused by *Yersinia pestis*. Our interpretation of its economic, social and institutional consequences ultimately depends on this identification. At least initially, European historians and demographers were at the centre of the debate on the characteristics of the disease. Even though Yersin's claim that he had

found the source of all the great plagues of the past was rarely questioned, the complexity of the mechanisms by which the disease he had identified was transmitted, hardly seemed compatible with the exceptional speed with which the Black Death, having reached Europe at the end of 1347, spread throughout most of the continent during the following year, without in any way coming to a halt, and continued to advance towards the north and the north-east until 1351. For *Yersinia pestis* to spread, in fact, requires a complex interaction between the various species involved (humans, fleas, rats), in turn conditioned by a variety of ecological and environmental factors whose characteristics are extremely difficult to reconstruct for such remote periods.

From the outset, therefore, it was suggested that somehow the historical plague was transmitted from person to person: thus following people in their movements and not dependent on the presence, alongside them, of infected parasites. Some were to suggest that the great epidemics of historical plague were principally due to the pneumonic plague, which could be directly transmitted by humans. This was the opinion of David Herlihy, who, however, pointed out some inconsistencies: it was difficult to explain, for example, why a pulmonary illness caused more deaths in the summer months rather than in the winter (Herlihy, 1967).¹⁰ An alternative hypothesis was put forward by Jean-Noël Biraben, who suggested that the human flea (*Pulex irritans*) was also able to transmit the disease (Biraben, 1975): it seemed to him that it was not possible otherwise to explain the epidemiological characteristics of the historical plague that implied a profile of an illness easily transmissible from person to person. Even this theory, however, has found little support from contemporary research on *Yersinia pestis* epidemics.¹¹

The debate over the identification of the agent of the historical plague quickly merged with that concerning the disappearance of the disease between the eighteenth and nineteenth centuries. The last important epidemic cycle in the Mediterranean world began with the plague of Marseilles in 1720. This final cycle is closely linked to the development of great European ports (as well as Marseilles, cities like Messina and Tunis were affected) dedicated to commerce with the Levant, and it lasted until the first decades of the nineteenth century, quickly coming to an end after the epidemic in Majorca in 1820. After that the historical plague finally left the Mediterranean, being reported for the last time in Egypt in 1844 (Restifo, 2005). The reasons for its disappearance remain a mystery. From time to time various factors have been suggested: from a (presumed) improvement in hygiene and the growing effectiveness of the efforts of the health authorities; to the transformation in rat populations (the underground war that saw the *Rattus rattus*, the black rat, commensal of humans, gradually replaced by *Rattus norvegicus*, less adapted to transmitting the disease to humans); to climatic, environmental and ecological changes; and, finally, to man's adjustment to *Yersinia pestis*. The latter circumstance is, though, highly unlikely,

as human beings cannot acquire any lasting immunity to this disease (Del Pantà, 1980: 183–91; Livi Bacci, 2000; Cohn, 2002).

For a variety of reasons, none of the factors mentioned is totally convincing and it seems certain that, even if the historical plague was really *Yersinia pestis*, it would be necessary to look for the explanation for its disappearance in a combination of causes whose interaction has yet to be clarified. This degree of uncertainty corresponds to that related to the characteristics of the disease (was it transmitted from one human being to another? If so, with what mechanisms and in what form? and so on) and partly depends on it. When, at the beginning of the 1980s, some European scholars attempted to sum up the results of 20 years of debates and intense research, they showed a tendency to admit the simultaneous presence of diverse factors regarding both the transmission and the disappearance from Europe of the historical plague. This is certainly the case with Lorenzo Del Pantà's book dedicated to the Italian epidemics (1980), which remains the best synthesis ever attempted on the subject. Once this period was concluded, continental, and especially Italian, historiography seems to have lost interest in the plague, apart from making a thorough study of specific issues like the relationship between epidemics and the management of the urban environment (Sansa, 2006) and the eighteenth- and nineteenth-century 'Mediterranean' epidemic cycle, up to then neglected in favour of the pandemics of the medieval and Early Modern Age (Speziale, 1997; Restifo, 2001, 2005). The question of the characteristics of the historical plague, which many admitted conflicted, at least in part, with those of contemporary *Yersinia pestis*, faded into the background. This circumstance marks an important division between continental European and Anglo-Saxon historiography, where the debate on the identification of the disease would continue in the following decades, and would intensify in the twenty-first century (only recently in Italy have there been the first signs of a rapprochement between the two historiographies; Del Pantà, 2007).

Already in 1984, Graham Twigg, a zoologist, claimed that he had shown, on the basis of the data collected studying rat cemeteries, that the population of rats in the British Isles in the centuries of the great plagues (fourteenth to seventeenth) in no way corresponded to that presumed indispensable for the *Yersinia pestis* to spread. The hypotheses that many had proposed concerning the migration of the various subspecies of rodents, their general demographic characteristics and clandestine wars were, therefore, at least as far as England was concerned, without any empirical foundation. Some years previously Biraben had also warned of the risks inherent in systematically resorting to rats, and to related rat-epizootic diseases, as if they were *deus ex machina* able to provide an explanation for any inexplicable discrepancy between human epidemics of the past and what would be expected on the basis of the behavioural studies of *Yersinia pestis* in the contemporary era (Biraben, 1975, vol. 1: 333–7).

Besides rejecting the current interpretation regarding the role played by rats during medieval and modern plagues, Twigg underlined numerous other inconsistencies between the historical appearances of the plague and those conjecturable on the basis of the characteristics of the epidemics of *Yersinia pestis* described by the colonial commissions between the end of the nineteenth and the beginning of the twentieth centuries. He thus totally rejected the current identification of the disease, and put forward his own theory: in reality, the historical plague was caused by anthrax (Twigg, 1984).

As far as I know, nobody has welcomed Twigg's theory, which in effect creates more problems than it solves, as the ability of anthrax to cause great epidemics over a large area has yet to be demonstrated. However, the premises of his analysis are still significant, both apropos of the difference in the behaviour of *Yersinia pestis* and of the historical plague, and concerning the excessive recourse to rodents to provide an explanation for it. After Twigg, other scholars began precisely from these dissimilarities to put forward other theories. So far the principal studies in this field have been carried out by Susan Scott and Christopher J. Duncan (Scott and Duncan, 2001, 2004; Duncan and Scott, 2005), who suggest that the historical plague, in reality, was a 'viral haemorrhagic fever', similar to ebola. To demonstrate this, the authors started from micro-demographic investigations focused on the plagues of Penrith (1597–99) and of Eyam (1665–66) in England, using sources such as parish registers and nominative reconstruction techniques to estimate all the epidemiological parameters of the historical plague.¹² On the basis of this information, and resorting to epidemic modelling, the authors 'construct' a highly contagious and lethal disease, directly transmittable from person to person, which they call 'haemorrhagic plague'. This attempt at identifying the disease does not seem convincing either, in the first place because it is based on an extremely small number of cases (about a dozen families) and on a questionable application of the techniques of nominative reconstruction. Second, because later empirical studies, in particular for the cases of Milan in various fifteenth- and sixteenth-century plagues and for Nonantola in the seventeenth century, have made it possible to reach very different measurements of some crucial variables¹³ (Alfani and Cohn, 2007a, 2007b). Consequently, Scott and Duncan's theory, which unlike Twigg's, has been given a favourable reception by some experts (Cosmacini, 2006: 50), is, in my opinion, to be rejected.

Twigg, Scott and Duncan are not the only members of the group whom John Kelly recently defined, somewhat incorrectly, as 'plague deniers'.¹⁴ Other scholars, Samuel Cohn, for example, while not attempting to establish an identity, have expressed strong doubts that the historical plague had epidemiological features matching those of contemporary *Yersinia pestis*.¹⁵

These scholars share with most historians and demographers of the past a certain perplexity about the modalities of transmission of historical plague,

which all, or almost all, available data suggest was by contagion from person to person. This is what I have recently tried to demonstrate in the case of Nonantola during the plague of 1630 (Alfani and Cohn, 2007b). As well as questioning the nature of the historical plague, a possible way out of the impasse is to assume that during the plagues other mortality factors might have been at work. This would justify not only the impression of contemporaries convinced that human contact was the source of contagion, but also what is conveyed by the impersonal data that can be inferred from the parish registers of burials, from the city books of the dead and from the registers of hospitals and lazarettos. Consequently, John Henderson maintained that the Florentine plague of 1630–31 was in reality a mixed epidemic of bubonic plague (*Yersinia pestis*) and typhus. As typhus is easily transmitted from person to person by lice (see below), this would explain some of the characteristics of the epidemic. Besides, if typhus broke out in the city, then the efforts of the health authorities against the ‘pestilence’ would have been more effective than what is commonly believed (Henderson, 2001). Although Henderson puts forward a very convincing argument for the existence of a secondary contagion of typhus during the plague that he studied, it seems difficult to maintain that similar circumstances were attested to in all the many cases for which discrepancies are known.

The identification of the historical plague is further complicated by conflicting information provided by those who have attempted to search for traces of *Yersinia pestis* in skeletons from emergency cemeteries dug during the epidemics. On the one hand, a group of researchers, mainly French, has declared that they have identified a marker of *Yersinia pestis* – that is to say a fragment of the DNA typical of the bacillus – in dental pulp obtained from cemeteries such as the one at Fédons in France, which was used during the plague of 1590 (Signoli et al., 2002; Drancourt and Raoult, 2002, 2004; Bizot et al., 2005). These authors, while admitting that the technique used needs to be further improved (Bizot et al., 2005), seem to have no doubts about the fact that *Yersinia pestis* was the agent of the historical plague. On the other hand, however, other researchers contest this as they have not managed to reproduce in the laboratory the results obtained by the French group, neither by using the technique proposed by Drancourt and Raoult, nor by perfecting it (Prentice et al., 2004; Pusch et al., 2004; Thomas et al., 2004a, 2004b). These researchers, in general, do not exclude the possibility that the problem could be technical and are unanimous in maintaining that further studies are necessary, explicitly admitting, however, that the identification of the historical plague with *Yersinia pestis* could be mistaken.

In conclusion, at the present moment, the palaeodemographic-microbiological approach does not seem to offer any certainties. What is more, if one day the presence of fragments of the DNA of *Yersinia pestis* in medieval and modern cemeteries was to be confirmed and accepted by

the scientific community, the question of which variety of the disease was responsible for the historical plague would remain unsolved. Recently, as many as eight different populations of *Yersinia pestis* have been identified, all descendants from one original *Yersinia pseudotuberculosis* that probably emerged about 6500 or so years ago (Achtman et al., 2004).¹⁶ It is still, however, a very hypothetical reconstruction based on techniques of evolutionary biology, which modifies the previous hypotheses that distinguished between three 'biovars' of the disease: *Antiqua* (responsible for the Plague of Justinian); *Medievalis* (which reached Europe in 1347); and *Orientalis* (which caused the Asian epidemics of the nineteenth and twentieth centuries; Devignat, 1951). No matter whether they are populations or biovars, the problem is the same: that is, it is possible that the historical plague was caused by a version of *Yersinia pestis* that was different from the one identified by Yersin. Therefore, as acknowledged even by those who claim that they have found the DNA of the disease in plague cemeteries (Aboudharam et al., 2005), the presence of a genetic marker of *Yersinia pestis* would merely guarantee that the agent of the historical plague is closely related to the contemporary plague, perhaps characterized by different modes of transmission.

Ultimately, if we accept what is implied, with a certain statistical consistency, by the empirical data available today – that is that the historical plague 'seems' to be transmitted from person to person – three possibilities emerge:

- 1 The method used to analyse the sources is mistaken, because, for example, it does not make it possible to distinguish between deaths due to plague and those due to typhus in the case of concurrent epidemics (as suggested by Henderson, but also for the plague of 1348–49 in England, by Theilman and Cate, 2007), or because the epidemics of the past were conditioned, broadly speaking, by ecological and 'environmental' factors of which we are unaware. However, accepting this hypothesis a priori would mean getting out of an awkward situation with a new *deus ex machina*, substituting the migration of rats, an expedient often used in the past. Whatever the reason, the transmission between humans would only be specious, the result of an (unwittingly) misleading use of the documentation available.
- 2 The historical plague is a biovar, or anyway a disease more or less distantly related to the contemporary *Yersinia pestis*, with different characteristics that in part elude us, but include the ability to spread more efficiently from person to person.
- 3 Historical plague and *Yersinia pestis* are different diseases, having in common only certain symptomological affinities (like the presence of buboes). In this case, the historical plague would be an unknown and probably an extinct disease (as in Scott and Duncan's hypothesis) or a biovar or related to a disease that still exists, which had, however, such very different symptoms that make recognition complicated.

The attention that I have so far paid to the current debates on the identification of the historical plague is due partly to the fact that it is a question that I have very much at heart, as it is a field of research in which I have been directly involved (Alfani and Cohn, 2007a, 2007b), but above all it is due to the conviction that the very identification of the disease, or rather, the explanation of some of its crucial biological and demographic characteristics, such as the mode of contagion or evolution of the mortality structure over the centuries, is the starting point to reopen the question of the interpretation of the economic and social consequences of the plagues. As in the case of Famine and War, but even more so, a correct evaluation of the damage wrought by Plague must begin from the way in which it affected the population. In other words, also in this case, demography provides us with an indispensable standpoint from which to regard the economy.

The Italian historian who has paid most attention to the economic consequences of the plague is certainly Carlo M. Cipolla, the author of a series of now classic works on the subject (Cipolla, 1977, 1981, 1986). It is easy to demonstrate that in his interpretation, the identification of the agent of the plague (which he believes is the same as contemporary *Yersinia pestis*) is crucial. So, for example, when dealing with the effectiveness of the countermeasures taken by the health authorities in Florence during the plague of 1630, Cipolla observes:

In January the *Magistrato della Sanità* [the Health Magistrate] in Florence decided to implement a general quarantine throughout the State. This meant confining the entire population to their houses for a period of at least forty days, the healthy as well as the sick, and those suspected of being sick, in the wishful thinking that if human contacts were reduced to a minimum, the epidemic would be given a *coup de grâce*. [...] Obviously, rats and fleas were not taken into account because their role in it was not suspected. Today, knowing about these things, no epidemiologist would condone a general quarantine that confined people to their houses where the breeding ground of infection lay. People at the time, however, rebelled against the idea of a general quarantine, not on the basis of scientific principles, but because the general quarantine, as well as being an unspeakable nuisance, meant all economic activity came to a halt and thus caused further misery. (Cipolla, 1977: 25, our translation).

Here we find mention of what from an economic point of view was one of the worst consequences of the plague: economic activity came to a standstill, largely due to the countermeasures taken by the health authorities. However, if Cipolla was certainly right to underline this aspect, he could be wrong in believing it to be a 'cost' borne in vain. If the plague was transmitted by rodents and fleas, then blocking up people in their houses in no way prevented the illness from spreading. In more general terms, whether human

contagion is or is not recognized is like declaring that the health authorities were taking important and effective measures, even though costly in terms of the money spent and of the loss of potential earnings inflicted on the population, or, on the contrary, that they were wasting public money and pointlessly oppressing communities that were already sorely tried.

Plague and typhus from the Italian Wars to the Plague of San Carlo of 1575–77

It is necessary to analyse the effectiveness and the cost of public health policies starting with an investigation into the succession of plague epidemics in Italy during the sixteenth century. As far as the first part of the century is concerned, I have already mentioned in the previous chapter that during the Italian Wars we can trace two negative cycles in which famine and plague are concurrent. In the second one, 1522–30, famine prevails – this has already been dealt with. In the first, however, plague had a pre-eminent role. This cycle covers the years 1499–1506, beginning therefore with the return to Italy of the French led by Louis XII, including the whole of the period of Cesare Borgia's exploits and ending a couple of years before the disaster of Agnadello (1509).

For such a distant period, we do not have at our disposal a sufficient number of demographic series of baptisms, and even fewer of burials, to map the geographical extension of the epidemics according to modalities analogous with those already employed for famines. On the basis of the *Annali delle epidemie* by Alfonso Corradi (1973), though, we can say that the plague struck Rome, the Marches, Ferrara and the surrounding area, Fiesso, Ravenna and Forlì in 1499; Siena and Verona in 1500; Messina, Genoa, Como and Modena in 1501; Milan and other parts of Lombardy in 1502; Venice, Piacenza and once again Rome and Ferrara in 1503; Rome and Reggio Emilia in 1504; and Perugia, Recanati, Florence and other Tuscan cities, Bologna, the area around Verona, Ferrara and the unfortunate city of Rome, afflicted for the third consecutive year, in 1505. From other sources, we learn that the plague was present also in Parma in 1504–05 (Romani, 1975: 67). In 1505–06, a serious epidemic struck Cremona. In this case it was not plague, but petechial typhus, a disease that, according to the famous doctor Girolamo Fracastoro, first appeared in Italy in 1505, perhaps arriving from Cyprus, where it seems to have been endemic. It is probable, however, that petechial typhus had already been present in Italy for years, a possibility conceded by Fracastoro himself, who was the first to describe it, analysing the epidemics of 1505 and of 1528 in his fundamental work *De Contagione et contagiosis morbis* (Del Panta, 1980; Cipolla, 1986; Cosmacini, 1988; Livi Bacci, 2000). Venice was struck, too, in 1506 and its famous doctors were taken completely by surprise.¹⁷ As it is transmitted by fleas, petechial typhus develops more easily where there are poor sanitary conditions. This was

the case with military encampments (hence the name *tifo castrense*, camp typhus, by which it is sometimes called) and in general of armies, especially those in disarray. This is why the Italian Wars took it just about everywhere in the Peninsula (for example, in Rome in 1527, arriving in the city with Charles V's Landsknechts; Cosmacini, 1988: 102). Once the wars were over, petechial typhus continued to occur cyclically, especially together with famines, when a weakening of the immune system favoured contagion. It will be remembered that the disease contributed to aggravating the effects of the terrible famine of the 1590s.

Generally, contemporary observers agree in maintaining that the spread of the plague and other 'contagions' at the beginning of the sixteenth century was facilitated by the movement of great masses of men: pilgrims making for Rome for the jubilee of 1500, the French armies who, having taken Milan in 1515, were moving towards the Kingdom of Naples, German, Spanish and Swiss divisions that poured into the Peninsula from all directions and, lastly, the troops of Cesare Borgia. War, in short, greatly facilitated the spread of Plague as well as bringing Famine back to Italy in the way already described. In particular, 1505 was a year of extreme shortages. In Bologna, poor harvests forced the Bentivoglio, for a short while still lords of the city, to expel all the *forestieri*, while in Florence the food-provisioning authorities decided to distribute large quantities of cereals bought at a high price in Languedoc, in England and in Flanders. Some of the epidemics that broke out where armies or pilgrims carried the contagion were extremely serious: in Ferrara it seems that there were 6000 deaths, to which are to be added the 4000 refugees who fled from the city to escape contagion, and of whom, at least for a time, all trace was lost (Corradi, 1973: 369).

The epidemic cycle, certainly among the worst in the Early Modern Age, did not, however, reach the levels of mortality or the geographical extension typical of the worst plague pandemics. For its contemporaries, who, in those years, followed in trepidation the complex events of the Italian Wars, the plague was rather a further factor worsening a situation already badly affected by the events of the wars and dearth of foodstuffs. The same can be said for the second phase of acute crisis in the first half of the century when, between 1522 and 1530, plague and typhus often occurred together with a state of unrelenting malnutrition and famine. In any case, once this phase had passed, Italy seems to have been free of plague for a long time: the period between 1530 and 1575 seemingly was a kind of happy parenthesis.¹⁸ With a change in the scenario in Europe, War moved northwards, to France, Germany and Flanders, and Famine and Plague followed it. The latter was the first to return to the Peninsula to complete its sixteenth-century *grand tour*.

In 1575, in fact, Plague reappeared at the opposite ends of the Peninsula, in the region of Trent and in Sicily. Probably they were two distinct epidemics, although concurrent. According to the chronicles of the time, plague arrived in Sicily on board a pirate ship returning from Berberia, with a load

of carpets and woollen cloth. It infected the port where it docked, Sciacca, and from there spread to Palermo and Messina, then infected the whole island; at Messina it is recorded until 1578 (Aymard, 1973a: 11–12). We know for certain that also Trapani was affected (Del Panta, 1980: 145).

In the north, the plague was present in Trent from September 1574, brought by two Flemish itinerant singers who, settling in the city, seem to have infected 60 houses, as well as the hospital where, in the end, they died. The city authorities took immediate action, sending the sick to the lazaretto and the merely suspected cases to wooden buildings set up in the *contado*, and burning household goods and other furniture from the infected houses. The disease seemed to go away with the arrival of the cold weather, only to reappear in May 1575 (Corradi, 1973: 580). From Trent and other nearby communities, also infected since 1574, the contagion would spread between 1575 and 1577 to most of northern Italy (Liguria is the exception, being affected only in 1578–79). When the plague reached Milan, the archbishop Carlo Borromeo believed that it was a punishment for men's many sins. Contemporaries were so impressed by the penitence and the incessant prayers with which the archbishop invoked divine mercy, that the plague came to be known by his name (Besta, 1578; La Cava, 1945; Majo, 1995).¹⁹

Traditional sources suggest that the infection spread over a relatively limited area. It would seem to have spared the whole of Piedmont, as well as many cities in Lombardy and in Emilia and a part of Veneto, coming to a halt southward on the borders with Tuscany (with Lucca perhaps being infected; Del Panta, 1977) and the Papal States. The Kingdom of Naples was completely spared. However, where the plague struck, it was devastating: 17,329 deaths in Milan, about 20,000 in Brescia (Corradi, 1973: 593), and even 46,721 in Venice (Preto, 1978: 111). Among the other important cities hit by the epidemic were Pavia, Monza, Mantua, Verona, Vicenza, Padua (La Cava, 1945: 46–9, 60–1; Corradi, 1973: 591–625; Del Panta, 1980: 144–7). Genoa was the last to be affected, in 1579 (Costantini, 1978).

Even though sixteenth-century statistics related to deaths, mainly taken from chroniclers and witnesses, are not completely reliable, they are anyway appalling figures.²⁰ On the basis of population estimates on the eve of the epidemic inferable from Corradi (1973) and from Beloch (1994), we can make an approximate calculation of the mortality rates: about 182 per 1000 in Milan; 265 per 1000 in Venice; 358 per 1000 in Genoa; and a staggering 444 per 1000 in Brescia (see Table 3.1). Also in Milan, according to the account of the commoner Giovanni Ambrogio de Chozis, in the district of the greengrocers the mortality rate seems to have reached 333 per 1000 (700 dead out of a total of 2100 inhabitants; cit. in Ferro, 1981: 14). These are levels analogous to or only slightly lower than the ones that would characterize the last great plague in northern Italy (1629–31), when rates higher than 30 per cent were extremely common, and probably the norm (Alfani, 2010b): a remarkable circumstance, especially considering the far

Table 3.1 Urban mortality rates during the Plague of San Carlo, 1575–77

City	Mortality rate (per 1000)	Population
Brescia	444	45,000
Crema	220	10,000
Genoa	358	67,000
Mantua	170	43,000
Milan	182	95,000
Monza	111	18,000
Padua	344	36,000
Palermo	40	80,000
Venice	265	170,000
Verona	200	60,000
Vicenza	79	30,000

Note: Even though the epidemic lasted from 1575 to 1577 (save for Genoa, where the plague arrived in 1579), different centres were affected at different times. This does not have an impact on the estimate of the mortality rates, obtained comparing the number of deaths with the population at the outset of the contagion. The figures are to be taken as approximate.

Source: Author's database.

more complete documentation that has been preserved and, therefore, the greater reliability of the estimates.²¹

Unlike the epidemics at the beginning of the century, for the Plague of San Carlo we have at our disposal demographic series that are sufficient to map out the spread of the disease in the territory. In the localities in my sample where plague was unmistakably present, in the two-year period of 1576–77, an average reduction in births (baptisms) of about 16.5 per cent above the normal trend is to be found. With regards to this level, I have drawn up Figure 3.1, following the methodology illustrated in the previous chapter. Due to the scarcity of data related to burials, it has not been possible to measure the trend in mortality in the same way.

The maps confirm that the Plague of San Carlo had extended over a relatively limited area. Starting from a cisalpine belt extending from Milan to Venice and that southward goes as far as Pavia and Mantua, there are signs of ramifications towards Piedmont (in particular in the area of Cuneo), Liguria and Emilia. It is obviously a hypothetical reconstruction of the area affected by the contagion, as a fall in births can depend on other factors, not least on chance. It is, though, the best possible approximation at the moment. It is particularly interesting to observe the centres in which baptisms did not decline, the area, in short, that was probably spared. Thus three conclusions can be drawn. First, that the Alpine valleys (low, medium and high) north of the belt where the plague was most virulent were not affected by the contagion (apart from the Trent area from where, in fact, it began). Second, that the 'resistance' to the spread of the disease

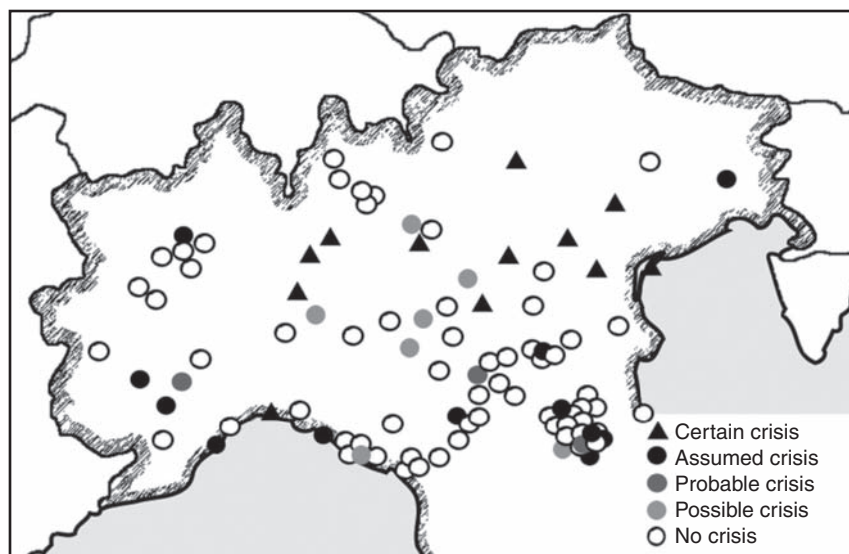


Figure 3.1 The Plague of San Carlo, 1575–77: the decline in births

southward seems to have been much stronger than so far imagined. Rather than coming to a halt in the Apennines on the borders of Tuscany, the plague seems to have lost its impetus much earlier. There are only sporadic signs that it penetrated the area of Emilia. Third, moving westward, the contagion encountered resistance in central Piedmont, and it seems to deviate toward the south.

Observing the map as a whole, it is possible to discern a characteristic of demographic crises due exclusively to epidemical factors, differentiating them from those related to famine or those of 'mixed' origin.²² Starting from an area of particular virulence, with a rather limited extension, in which the contagion spreads like wildfire, the epidemic, extending towards the neighbouring zones, follows irregular paths, sometimes penetrating in depth and striking ferociously, sometimes skirting vast territories to reappear almost by surprise in localities at a considerable distance from the hub of the contagion. This could be true of Finale Ligure and Rapallo, where the disease (taken that it was actually present)²³ could have even arrived aboard a ship. In the previous chapter (Figure 2.2) it was seen that the food crisis presented a completely different picture.

The map shown also enables us to affirm that the profile of the Plague of San Carlo was that of an urban epidemic, as it struck almost all the main cities in the Venetian Republic, as well as various other cities (above all in Lombardy), while not spreading pervasively in the countryside. Unfortunately, the scarcity of series for the Veneto area limits the possibility

of verifying this hypothesis. However, it can be seen that in Gambellara, in the *contado* of Vicenza, instead of a crisis there is more than a 50 per cent increase in births, probably due to people from the cities seeking protection in the countryside at the first signs of plague (something similar happens at Lumezzane Pieve in the *contado* of Brescia: +15.5 per cent). According to an observer of the time (Lippomano, 1578, cit. in Beloch, 1994: 447), compared to the 2357 victims in the city, there were apparently only 767 in the surrounding territory. As most of the population in the Vicenza area resided in the *contado* (about 135,000 inhabitants compared to the 30,000 in the city), we can calculate extremely disparate epidemic mortality rates: 76 per 1000 in Vicenza and just 5 per 1000 in the *contado*, which was then essentially spared.

The fact that most of the countryside in Veneto and in Lombardy was unaffected by the epidemic is of no little importance, since it explains the extremely rapid demographic recovery seen in the cities affected, which did not escape the notice of its contemporaries either. In 1578, Giacomo Filippo Besta wrote: 'Nor man will say that this great multitude of people [who died of plague] was in Milan, on the contrary in a moment it was full of people and in the same condition of abundance as before' (Besta, 1578: 53–4, our translation). For a rapid recovery of the urban population, it is essential for there to be excess population in not too distant areas, willing to move into the city. However, for a rapid recovery of 'abundance', which here seems to signify 'economic well-being', it is not enough to fill in quantitatively the dreadful gaps created by the plague, but rather it is necessary not to have a demographic problem of a qualitative nature, in other words, that the social and economic elite be spared the contagion. As I will argue later, essentially this is the case in all the sixteenth-century plagues, with the partial exception of the centres most seriously hit by the epidemic of the 1570s.

The intervention of the public health authorities from the Plague of San Carlo to the epidemics at the end of the sixteenth century

The Plague of San Carlo, which struck numerous cities in various states, provides an opportunity to examine the ways in which the health authorities intervened. By the sixteenth century, they had acquired considerable experience in dealing with the contagion, and at last had the material and juridical means to enforce their decisions. In fact, Cipolla dates to around the mid century the moment when the public health systems of the Italian states were finally completed in all their component parts, with the quadrilateral of Venice–Milan–Genoa–Florence being a beacon of efficiency and organizational perfection, becoming a model for the rest of Europe (Cipolla, 1981: 5). The set of measures taken to prevent the contagion from spreading can be listed in a spatial perspective. At the first level were the controls

at mountain passes, at river and maritime ports and the political frontiers.²⁴ In the sixteenth century, this first barrier, created as an extension of the ancient controls at the city gates, is still easily penetrable. If the plague overcomes this barrier, and its presence is confirmed within communities of the state, the latter are 'banned' and isolated by sanitary cordons, which is the second level. Within these communities, an effort is made to limit contact between people as far as possible by means of quarantines and various restrictions on freedom of movement (third level). Those affected by plague are isolated in special structures (the lazarettos), placed at a certain distance from the built-up areas. In the sixteenth century, they became permanent structures in large or medium-sized towns, but in smaller towns or rural communities were still temporary (built specifically or readapted to deal with the contagion) (Cipolla, 1981, 1986; Cosmacini, 1988). See, too, the case of the '*gabanne*' (a temporary lazaretto) in Ivrea analysed below.

In the Venetian Republic, the central governmental authorities (Venetians) still had difficulty in making the subject cities of the *terraferma* (mainland) agree to their coordination. As Paolo Preto has pointed out, 'at the first suspicion of plague each city shuts itself in, erecting strict sanitary barriers, excludes commerce with its neighbours and, as far as possible, with the *Dominante* (i.e. Venice), except for some months later protesting vigorously to Venice because other centres retaliated in a similar fashion' (Preto, 1978: 24, our translation). So, in 1575, taking action before the Venetians, Padua imposed its own ban on Verona, even though contagion was only suspected, while in 1576, Vicenza did not trust the official reports on the situation in Verona (where the plague was now evident) and sent its own observers to check the situation (Preto, 1978: 24–5). Similar kinds of behaviour, as well as complicating the work of the central health authorities, greatly increased the damage to businesses. At the same time, precisely in order to limit this damage, other cities tried to elude the bans and shamelessly lied about the real situation of their public health. In Milan, the Health Tribunal, set up in 1534 by Francesco II Sforza, since 1575 had established sentry posts at river ports and at the city gates, decreeing that without the *fede di sanità* (the certificate of the Health authorities), neither people nor goods could enter the city (Besta, 1578). For a long time Milan was saved from the contagion and the Health Tribunal merely reinforced preventive measures, restricting the circulation of pilgrims coming for the new jubilee, extended by Gregory XIII to four Milanese churches, ordering that the city be thoroughly cleansed (and ordering at the same time the expulsion of beggars and vagabonds for health reasons) in March 1576 and, in the same month, increasing restrictions on the access of outsiders. At the same time, the list of the cities under a ban, with which all contact had been broken off, lengthened. Soon the city found itself subjected to a kind of siege, with the plague that first struck Melegnano, then Monza and that finally entered Milan itself (La Cava, 1945: 97–100). Measures similar to those of Milan were taken elsewhere, with varying results.

Thus in Naples, the Viceroy Íñigo López de Mendoza, Marquis of Mondejar, forbade entrance to the kingdom to those coming from areas considered to be at risk. He had the gates to the capital closed to all those who were not in possession of a health certificate and he even had ships laden with goods burnt in the port because they came from suspected areas. The steps taken were more effective than in Milan, or perhaps Naples was luckier; the fact is that it was spared the contagion (Corradi, 1973: 595).

The measures restricting movement obviously had a huge cost, both because they interrupted trading and even 'ordinary' economic transactions, like those between a city and its *contado*, and because they increased the number of those who, in the cities under a ban and in quarantine, were prevented from working and so required public assistance to survive. With regards to the first point, it is not easy to estimate what appears essentially to be a loss of earnings, nor to separate it from the problem of poverty caused by the shortage of goods, especially food, in the towns and villages under a ban. When, in October 1575, the *nunzio* (official representative of the city) of Verona, Marc'Antonio Corfini, informed the Venetian senate of the desperate situation towards which his town was heading because of the interruption of trade, he probably had both these aspects in mind (Pullan, 1964: 404–10). This may explain the reluctance of the capital itself, Venice, merchant city par excellence, to admit explicitly having been infected. Rather, its inhabitants displayed absolutely normal behaviour in order not to arouse the alarm of the envoys of the Republic's trading partners and to avoid bans being declared on the city for as long as possible, and its ambassadors tried with every possible means to deceive the foreign powers, allies included, about the actual severity of the situation (Preto, 1978: 31–4). This kind of unethical, but very common, behaviour (see later how the Dukes of Savoy acted in 1598), can be explained in the light of the real risks encountered by the cities under a ban.

While it is difficult to estimate the loss of potential earnings caused by the closure of trade routes, we have at our disposal far more accurate information related to the public spending borne by the infected cities to cope with the epidemic. The main item of these 'plague budgets' in the big urban centres was certainly the public assistance given to those who, in dire straits, lacked the means to obtain food supplies. During the epidemic, the number of the poverty-stricken kept increasing, both on account of the interruption, partial or total, of working activities, and because the blockade imposed on the city made the provisioning of food extremely difficult and, consequently, did not allow the less well-off to obtain supplies, as customary, on the urban market. Especially when a general quarantine was decreed and most of the population was confined to their homes, direct provisioning by the civil authorities was indispensable both to prevent deaths from starvation and from illnesses linked with famine (typhus) and also to keep in check the inhabitants' anger, which always risked turning into open rebellion.

So, when a general quarantine was decreed in Florence in the winter of 1630, the number of people in need of public assistance rose to more than 30,000 individuals from the 12,000 prior to the onset of the contagion, a considerable number bearing in mind that the city counted 80,000 inhabitants.²⁵ To feed these 30,000 mouths, Florence had to employ 1070 people, 186 carts and 23 mules, at a total cost of 150,000 to 160,000 scudi (Cipolla, 1981: 17–18; Henderson, 2001).

If the plagues of the seventeenth century were exceptionally severe, clearly worse than those in the previous century, it has to be said that the expenses incurred by the cities affected by the great sixteenth-century epidemics and especially by the Plague of San Carlo, were the same or a little less, as it is reasonable to expect, considering the rigidity in expenditures made for operations as demanding as sanitary cordons and general quarantines.²⁶ So, Vicenza drew on extraordinary financial resources amounting to 40,000 scudi (30,000 drawn from the Monte di Pietà, 10,000 lent by Venice), mainly for medical assistance and food for the poor; Brescia spent 60,000 scudi (20,000, once again, lent by Venice); Padua 50,000 ducats (of which 26,000 was drawn on the Monte di Pietà; Preto, 1978: 134–6).²⁷ These were cities that had between a quarter and a half of the population of Florence in 1629 (Vicenza had about 30,000 inhabitants, Brescia 38,000 and Padua 36,000, according to Beloch's estimates, 1994). Palermo, too, for the plague of 1575–76, spent more than 100,000 ducats for a population of approximately 75,000 inhabitants (Aymard, 1973a: 30).

These huge sums were obviously not only used to support urban populations at risk from starvation, but can be attributed to a long list of expenses. Once again, I will take as an example the city of Ivrea in the Duchy of Savoy during the plague of 1585. Like Turin and most of western Piedmont, Ivrea had been spared the Plague of San Carlo in the 1570s. In the last decades of the century, however, the Savoy lands on both sides of the Alps were badly affected by the plague and especially by the epidemic of 1598–99, which came from the Kingdom of France (I will come back to this later). The plague episode of 1585 seems to have involved a more limited area. In Ivrea, however, the contagion was extremely serious and required huge public expenditure that gave rise to a lengthy series of litigations and lawsuits that saw on opposing sides an insolvent community and citizens claiming their just reward for the 'public spirit' that they had shown during the epidemic. At the time, Ivrea had a population of between 3000 and 4500 inhabitants. The plague broke out on 26 August 1585 and ended on 10 March of the following year (Perinetti, 1989). According to some, it caused 2000 deaths (Benvenuti, 1976), a figure certainly exaggerated, not just because it would correspond to a mortality rate of between 444 and 666 per 1000, but because it is not consistent with the trend in baptisms celebrated in the city in that two-year period, which certainly registers a decline (in 1586), but also too-rapid a recovery for a population whose numbers were so brutally depleted.²⁸

Unfortunately, the parishes in Ivrea had not yet begun to record burials, the registers of which would have allowed a more accurate evaluation of mortality. The information at our disposal, however, at least enables us to affirm that the epidemic was extremely serious and it left a deep mark on its contemporaries. It is not simply by chance that right up to the mid nineteenth century, during the annual procession of the Assumption, the *Corpo dei Mercanti* (the Merchants' Guild) continued to bring thanksgiving offerings to the cathedral for the liberation from two specific plagues, that of 1630 and that of 1585 (Carandini, 1927: 61).

During the epidemic a ban was, as usual, put on the city and it had to cope with the emergency with its own resources. A 'List of the sums spent for public benefit during the contagion'²⁹ provides information about the expenses sustained and the city's residual debts, or at least those that were officially recognized. The total sum amounts to 6747 scudi, no trifling sum when compared with the size of the city and one that corresponds to the per capita expense borne by the cities in Lombardy and Veneto affected by the epidemic of 1575–77.³⁰ The individual items of expenditure can be combined as shown in Table 3.2.

It can be estimated, therefore, that in Ivrea the victuals for those infected and shut up in the '*gabanne*', that is the temporary lazaretto erected outside the city, counted for only a relatively small amount (15 to 18 per cent) of the total expenditure. From this point of view, the city was certainly favoured by the fact that it was relatively small and was under a ban that included part of its *contado*.³¹ We know, for example, that the 'barrier', or the check-point, on the road that led from Ivrea to Turin was located at the boundary with the community of Pavone.³² In the direction of Fiorano, towards the Aosta Valley, during the plague legal deeds were drawn up 'where it is said

Table 3.2 Expenditures of the city of Ivrea to manage the plague of 1585

Item	Scudi
Wine and incense	54
Various	100
Guard for the <i>monatti</i> [removers of the corpses of plague victims]	180
Shoes, shirts and other goods supplied to the <i>monatti</i>	189
Wood to make huts, straw and bread	444
Wood for heating the <i>caldare</i> [cauldrons]	476
Wine	490
Spices and perfumes	495
Meat	547
Wages for services given to those infected	3,772
Total	6,747

Source: 'List of the sums spent for public benefit during the contagion', Municipal Historical Archive of Ivrea, *Categoria* 72 (*Pestilenza*), no. 3410.

in the middle of the meadow of Pavona on the island formed by the River Dora and where at the present time the barrier or bar in the direction of Lezulo is erected, ordered by the illustrious *signor* Carlo Venusta, general keeper of Health for his Highness, on account of the contagion of plague prevailing in the city of Ivrea'.³³ The work of the notaries at the time of the plague, by no means interrupted and even increased by the boom in wills, merits specific studies.³⁴

The possibility of reaching, albeit with restrictions, the countryside surrounding the city walls, guaranteed that Ivrea did not suffer hunger, and enabled it to limit a typology of expenses that in larger cities, especially when a general quarantine was imposed, grew out of all proportion, becoming the principal item.

In Ivrea, a further 8 to 9 per cent of the expenses concerned medicines (drugs, perfumes, incense) and a similar sum was used to buy the necessary wood to heat the *caldare*, that is the cauldrons where clothes and 'feathers' (mattresses) were cleansed. In the summary presented, the main item, however, is clearly the services provided for those infected, which amounted to 3772 scudi, that is 56 per cent of the total. Unfortunately, the source is extremely vague about the duties of each employee and thus it is not possible to be more specific, but clearly the situation of the provost Gandino (probably employed as a confessor), who for himself and his two servants demanded altogether 1935 scudi, is quite different from that of Margarita Barachia, who for 'cooking for the sweepers for four months' charged 36 scudi. In Prato, during the plague of 1630, the relief workers and the watchmen at the gates received 4 scudi a month; the attendants and the grave diggers 8 scudi, the same as the superintendent (Cristofano di Giulio Ceffini); the bargello, that is the magistrate in charge of policing, 10 scudi; the confessor 16 scudi; the surgeon 18 scudi (Cipolla, 1986: 157). It is reasonable to imagine that, at least proportionately, this pay was not very different from that paid out in Ivrea 45 years previously. Therefore, it seems certain that the demands of the provost included some other unspecified service as well as that of a confessor. Besides, the source in this case specifies that it was a 'claim', implying that there was not complete agreement on the amount due.

As a matter of fact, once the epidemic was over, the city became object of a series of complaints made before the Duke Carlo Emanuele I because it had refused to pay for services carried out by people not mentioned on the list cited earlier. So the 'boatman' Gio Domenico Bima, who had transported the mattresses from the banks of the River Dora, where they had been piled up, to where the *monatti* cleansed them, and had moreover supplied wood for the cauldrons for a sum of 50 scudi, demanded payment for the wood and for transport, and perhaps compensation for having risked his life 'using and handling things full of contagion'.³⁵ The keeper of the Croce Rossa inn, Battista Mastalone, who under orders from the Health Magistrate, and although he had closed down in order to escape contagion, had been

forced to lodge and feed for many days the superintendent Borgatino, maintained that the latter had brought the plague into his house, causing the death of his wife and various servants, as well as necessitating the fumigation (with the consequent loss or damage) of all the furniture and linen of the inn. Consequently, he demanded compensation for the damage.³⁶ In both cases, the duke approved the petition and subpoenaed the representatives of the city.

Ivrea's unwillingness to pay is symptomatic of the chaotic situation in which both the ordinary and extraordinary urban institutions had to operate during the worst epidemics, when those who had witnessed the decisions taken and the jobs assigned might not have survived the contagion. Moreover, it is another example of the financial paralysis that the plague could inflict on administrations, which were then forced to adopt unpopular measures (deferring payments) or resort to unethical conduct (renegotiation of compensation owed or real frauds).

Shortly after the plague of 1585–86, Ivrea feared that it might be affected by the epidemic of 1598–99, which, however, it seems to have been spared,³⁷ unlike Turin and other important Piedmontese towns such as Susa, Rivoli and Collegno (Picco, 1983). It was the last great plague of the sixteenth century, one rather neglected by historians, both because it came between the better-known epidemic cycles of 1575–77 and 1629–31, and because of the limited part of Italy involved.³⁸ Its importance, though, is not limited, as it cancels out a kind of 'demographic advantage' that Piedmont, relatively unaffected even by the famine of the 1590s,³⁹ had enjoyed for some decades. Turin was already infected in September–October of 1598. After the usual easing off in mortality in the winter months, the epidemic peaked from late spring of the following year (Corradi, 1973: 697; Picco, 1983).⁴⁰ Like the Venetians 20 years previously, the Savoy had no scruples in attempting to hide this fresh outbreak of the epidemic, at least according to the Venetian *Residente* (ambassador), Contarini, who from Chieri, in April 1599, wrote that this conduct was due to the fact that 'the Fair of Asti had already opened, as he [Carlo Emanuele I of Savoy] had ordered the merchants of Turin, indeed had forced them, to all come and bring there their merchandise, in order to be able to obtain from them that sum of money, which in various ways he usually obtains at the present time, not taking as an excuse the fact that they had none, on account of being unable to trade' (cit. in Corradi, 1973: 697, our translation). So, fears for state revenue induced the same central authority, and not only the urban institutions, to succumb to temptations that could not but facilitate the spread of the contagion. Once it was clear that the plague had returned, Carlo Emanuele I encouraged the evacuation of the capital, isolating the beggars in a hospital outside the walls and encouraging the population to move to the mountains and the countryside, a measure that seems to have further facilitated the rapid spread of contagion in the area surrounding Turin.

The expenses incurred by the city of Turin to cope with the epidemic have been accurately reconstructed by Leila Picco (1983). They were sums that amply exceeded the ordinary revenue (which was in any case reduced by the interruption of trade and by depopulation on account of deaths and the flight of many citizens), the reason why Turin had to resort to extraordinary taxation and to incurring massive debts. By February 1599, more than 191,000 florins had been borrowed to contribute to the city's overall expenditure, which amounted to almost 195,000 florins (Picco, 1983: 165). For the following period we have at our disposal an exceptionally good source, the accounts of the treasurer Bartolomeo Ferrero Gariglio, which enables us to identify the single items of income (amounts withdrawn, credit) and expenditure.⁴¹ With regard to expenditure, the source is similar to the 'List of the sums spent' used for Ivrea, relative, however, to a much larger city (with an estimated 14,244 inhabitants for 1571 and 24,410 for 1612; Beloch, 1994: 578). The account records the cash flow in the period 29 July 1599 to 8 February 1600, when approximately 188,963 florins were spent, therefore doubling the financial obligations that the city had already incurred in the first phase of the epidemic. The resources, obtained mainly (78.7 per cent) by resorting to fresh loans,⁴² were used to supply food for the lazarettos and the houses put in quarantine as well as for the disinfection of the city, for which 100 Savoyard *monatti* were employed (but their total number used for various jobs in January 1600 was 136) and for the ongoing public offertory to the Altar of San Rocco (Picco, 1983: 170–4). This last item is worth emphasizing as public devotion (or at least the one publicly organized) to placate divine wrath could involve huge sums to build churches, chapels and altars, to offer candles, statues and sacred fittings and for alms to the Church and to the poor.⁴³

Altogether it can be estimated that Turin spent around 450,000 florins to cope with the epidemic, a truly enormous sum, and equal to the ordinary expenses (prior to the plague) of many decades. This dramatic financial circumstance meant that the city found itself unable to pay off its debts promptly and was confronted by the kind of ethical-financial dilemma experienced by Ivrea fifteen years previously. Thus the Municipal Council of Turin's decision, taken on 5 March 1600, to stop the distribution of food rations to the poor was justified as follows: 'Since the city is drained of money because its revenues and income have ceased and is burdened with many debts, it would be better if it withdrew the rations that it still gives *because no better alms can be given than paying off debts*' (cit. in Picco, 1983: 134, our translation, my italics). The reduction in income from taxes in times of crisis, already mentioned when examining famines, regularly occurred during epidemics, impoverishing local and state funds (not forgetting the extraordinary expenses that had to be dealt with) and causing a rapid growth in public debt. In Marseilles, for example, at the time of the plague of 1556, income from local duties was reduced to a quarter of its

normal amount, while in the whole of France between the fifteenth and seventeenth centuries, the actual tax collected in years of plague was systematically halved (Lucenet, 1985: 143–4).

Damage to physical and to human capital

As well as the expenses incurred by the city to feed the population afflicted by disease or restricted by quarantines, to maintain hospitals, pay doctors, *monatti* and people employed in various ways to combat the contagion, it is also opportune to consider the cost that corresponded to the physical capital destroyed during the epidemic. In the economies of the *Ancien Régime*, we know that household goods and clothes, as well as having a use value, were also a reserve of capital that could be utilized relatively easily (bartered or exchanged for money). As the so-called miasmatic theory, popular in sixteenth-century medical science, held that the plague was a '*male attaccicchio*' (a 'sticky illness'),⁴⁴ spread by exhalations from infected bodies able to adhere to surfaces that could retain them, such as straw mattresses, clothes and even animal hairs (Cipolla, 1986: 74–6, and 1989: 14–16; Cosmacini, 1988; Henderson, 2001: 228–31), it is understandable why measures taken to keep the plague in check provided for the burning of 'feathers' and mattresses, household goods and clothes from the houses of the plague-stricken. We have already seen that in Ivrea, in 1585, as many as 476 scudi were spent on wood to heat the *caldare*. In Florence, in 1630, an extraordinary measure was taken, even though the plague, already reported elsewhere, had not yet reached the city. Given that 'foulness [is] the mother of the corruption' of the air, and the latter was deemed to be the cause of the plague, the company of San Michele was entrusted with the task of inspecting the homes of the poor to clear out everything that could cause a bad smell (Rondinelli, 1634, cit. in Cipolla, 1981: 15; and in Henderson, 2001: 23). Following their disquieting report, the Health Magistrate had 1347 new straw mattresses distributed to replace the filthy beds that were gradually destroyed. The financial obligation must have been considerable, as in order to guarantee the effectiveness of the measure all the new mattresses were stamped and their sale was forbidden, as also their confiscation in payment of debts (Cipolla, 1981: 16). As already pointed out, the destruction of goods often went well beyond mattresses and straw beds. When in December 1576, the first deaths due to plague were confirmed in Vicenza (a family who had fled from Padua), the house where they had died was emptied of all the '*robbe*' (clothes, household goods and so on), which were immediately burnt. When in February of the following year, new cases of the plague were found in a house nearby, all those who lived there were isolated and all their household goods burnt (Corradi, 1973: 592).

Even though it can be surmised that the harshness of the measures might have diminished once the contagion had become widespread, the economic

damage in terms of goods destroyed must have been absolutely devastating, especially considering that among the objects thought to be particularly suited to retaining the sticky plague miasmas were the precious wool and silk cloths produced in many Italian cities and stored in the merchants' warehouses in large quantities. At the height of the epidemic, they, too, could be burnt or fumigated with the risk of their being irreparably damaged. In the already cited case of Naples in 1576, the viceroy had the bales of imported cotton present in the city burnt, as well as a ship in port laden with extremely costly bales of silk (Corradi, 1973: 595). The measures taken, or the rumour that they could be put into effect, tended to paralyze the production of entire manufacturing sectors, and especially that of textiles. When in Mantua it was rumoured that an order would be issued to burn suspected textiles, the duke was immediately informed that the merchants would suspend production, depriving the poor workers of their jobs, and they would thus be reduced to abject poverty and be totally dependent on public assistance;⁴⁵ besides, there was an evident risk that the merchants would be encouraged to hide their existing stocks of goods (Belfanti, 1981: 62). The destruction did not even spare pets, whose fur was thought to be able to retain the plague vapours. Hence the decree, issued in Palermo in August 1576, to hand over dogs led to the death of 20,000 animals, buried alive under quicklime and stones (cats were spared, if only to prevent the proliferation of rats; Corradi, 1973: 582–3).

All in all, the measures taken by the health authorities were extremely costly, both economically and psychologically. We can only imagine the terror experienced by the families of the sick when deported for safety reasons to the lazarettos outside the city or confined to their homes hoping not to have been infected (Alfani and Cohn, 2007a). As already mentioned, the real question that we need to ask is whether or not it was worth it. If we espouse the traditional theory that identifies the agent of the historical plague with *Yersinia pestis*, then we would have to share the opinion expressed authoritatively by Cipolla, who maintained that the 'organizational genius' of the Italian cities, leaders in the struggle against the plague, without the support of adequate medical knowledge, would have prevented the health officers from seeing the enemy that they were up against. This situation would have led them to make mistakes, accusing the innocent and wasting resources. The general quarantines, in particular, increasing the rate of unemployment excessively and putting a great strain on public finances, as inevitably they burdened the cities with the responsibility of finding food for a large part of the population, would have been not merely absolutely useless, but actually damaging, because they kept people in close proximity with the holes of the rats, the agents really responsible for the contagion. Only some of the Health Officers' measures, even though dictated by erroneous beliefs, went in the right direction: for example, the burning of feathers, straw mattresses and infected clothes, home to the flea responsible for the transmission of

the illness from rat to man, or the distribution of waxed clothes to doctors and confessors in contact with the sick (Cipolla, 1981: 16–17).

This relatively critical view of the work of the health officers would be partly mitigated if it were recognized that alongside the principal plague epidemic there was the systematic presence of infectious diseases or, anyway, those capable of being easily transmitted from person to person, as in the case of typhus. In this case, the measures taken to limit contact between people would have been quite sensible (Henderson, 2001: 52). This conclusion would be reinforced if it were accepted, at least as a possibility, that the identification of the agent of the plague as *Yersinia pestis* needs to be partially or totally revised. Finally, we have to consider the fact that, even if we admit that the plague could be transmitted from person to person, similar measures, even during the same plague, had very different results, a fact that complicates any evaluation of their effectiveness. So, in 1575–77, we find at opposite extremes Naples (spared) and Milan (badly stricken). Or, if we wish to compare the development of the epidemic in infected communities, it is enough to compare Rome during the plague of 1656–57, where they managed to restrict the contagion to specific areas in the city, and Genoa, which instead was completely devastated by the plague (Sonnino, 2006; Fosi, 2006; Del Pantà, 2007). These are issues already mentioned, but it is worthwhile underlining once again that ultimately our opinion regarding not only the efficacy of the public health measures, but also their economic cost, depends on them. Did they make it possible to avoid further damage, resulting from a more marked mortality and the extension of the epidemic over a wider territorial area, or did they instead add further heavy burdens to the damage caused ‘autonomously’ by the plague? As the question is directly linked to the problem regarding the agent of the disease, for the moment it cannot be answered conclusively.

The evaluation of other costs imposed by the plague on the economies of the Early Modern Age also depends on its biological and demographic characteristics. First of all, it is worth reflecting on the extent of human capital destroyed by the epidemics. Regarding this, I have previously noted that the structure of the mortality during the plagues changed with time. From the second half of the fifteenth century, and therefore little more than a century after it reached Europe, the plague had ceased to be a disease able to affect rich and poor, young and old indiscriminately, as it had done in 1348, before the eyes of astonished observers like Giovanni Boccaccio. Already Cipolla and Zanetti (1972) observed that, according to most of the commentators of the Early Modern Age, the plague struck the poor more than the rich, not only because the former had fewer means at their disposal to defend themselves and tended to adopt a passive and fatalistic approach (while the tendency of those who had sufficient resources to abandon plague-stricken cities is well known), but also because often the epidemic began in the poorest areas. According to doctors of the time, it depended on the fact that the ‘contagion’

spread more effectively in environmental conditions typical of the urban poor. For example, Pietro Parisi observed in 1593 that 'it is absolutely true that for poverty and privation, in which the poor have always found themselves, the sticky illness, that is the contagion, which easily passes from one person to another, damages commoners more than the nobility: said sticky illness for ease and wealth the nobility can in part better avoid' (Parisi, 1593: 57, our translation). According to Cipolla and Zanetti, who rejected the idea that the infection could be transmitted from person to person, the reasons why the poor were more susceptible to the plague were anyway due to environmental factors as their houses were less salubrious and more infested with rats and fleas than those of the rich. They agreed with many of the writers of the time that diet also played a part: a better diet made the rich less susceptible to infection (Cipolla and Zanetti, 1972: 201), while sixteenth-century medical science tended rather to underline the miasmatic nature of the 'emergency' foodstuffs to which the poor population had to resort (Aymard, 1973a: 24).⁴⁶ However, in the latter example, it is clear that the risk of confusing death from plague with that due to other causes is considerable, an opinion that Maurice Aymard shares with Henderson, Del Panta and many others. Also note that if the historical plague was caused by *Yersinia pestis*, the physical weakening due to malnutrition can have only played a very marginal role.⁴⁷

If, then, reasons that Cipolla and Zanetti put forward to explain the social connotation of the plague are problematic from the point of view of the debate on the agent of the illness, the theory according to which in the Early Modern Age the poor felt its effects far more than the rich is corroborated not only by the medical tracts of the time, as clearly shown by Cohn's synthesis (2010a), but since the 1970s has also been confirmed by an increasing number of studies. This is the case, for example, of Florence between the fifteenth and seventeenth centuries (Carmichael, 1986; Henderson, 1999; Cohn, 2002); of Milan in the sixteenth century (Alfani and Cohn, 2007a); of Rome in 1656–57 (Sonnino, 2006); but also of Spain in the sixteenth and seventeenth centuries (Pérez Moreda, 1980). Some authors suggest that the gap between the rich and the poor continued to grow between the end of the Middle Ages and the seventeenth century, as for example in Bristol (Slack, 1977: 59). Others have pointed out an ever more systematic association between hunger and plague from the early fifteenth century (Blockmans, 1980; Dubois, 1988), precisely when the disease seems to have acquired a new social connotation (the poor have always been the first to suffer the effects of malnutrition). However, what has already been mentioned regarding the complexity of the causal connection of famine-plague is to be borne in mind (Pérez Moreda, 2010).

It was not only the doctors⁴⁸ who recorded a concentration of mortality in the poorest areas of the urban centres, but it was also clearly apparent to the public authorities and the community as a whole. This is probably

the principal reason why the poor, the plague's favourite victims, were seen to be responsible for the appearance of the disease. It is one of the reasons why their presence in the city became increasingly less welcome during the Early Modern Age, and the temptation to confine them in specific areas and institutions increased (Giusberti, 1980, 1984; Pullan, 1992: 107–11; Henderson, 1999). As for vagabonds and beggars, who, as they were usually *forestieri* and were not considered part of the body of citizens, had no right to public assistance, the outbreak of an epidemic became an opportunity to expel them (as in times of famine), in order to limit the presence of possible carriers of contagion. This happened in Padua and Verona during the Plague of San Carlo (Preto, 1978: 122). In Milan, the authorities assembled all the beggars and vagabonds, but while those unable to work were shut up in almshouses outside the walls and kept with funds provided by Archbishop Borromeo, the others were employed in combating the contagion (La Cava, 1945: 101). In Turin, in 1598–99, the 'shameful' poor were assisted with alms distributed to their own dwellings,⁴⁹ the poor 'beggars' were put in specific places (if possible outside the walls), while attempts were made to prevent the poor 'foreigners' from entering the city (Picco, 1983: 96–136).

The fact that, after the indiscriminate massacres of the fourteenth century, Plague started to concentrate on the poor is of no little consequence for our calculation of the damage to human capital. Except for the case of the most serious epidemics (like those of 1575–77, of 1629–31 and of 1656–57), the economic, political and social elites were essentially spared the contagion. Those who had the means and the skills (the nobility, the clergy, rich property owners and those employed in the liberal professions, but also craftsmen belonging to guilds) certainly had to interrupt their activities during the contagion, but usually managed to survive the crisis and to return to their roles as soon as it was over, without causing that dramatic lack of professional skills that occurred in many Italian cities after the fourteenth-century Black Death (Del Panta, 1980: 98).⁵⁰ At least during the sixteenth century, the loss of unskilled workers was easily compensated for by resorting to the excess labour available in the *contadi*, mostly spared during the terrible 'urban epidemics' of the 1570s. From this perspective, the seventeenth-century plagues mark a discontinuity, whose importance for the fortune of the Italian economies is much greater than what is generally supposed. I will develop this point in the Conclusion.

Finally, it is worth remembering the feeling of relief with which after the plague some observers saw the cities emptied of the poor and other 'useless' people: in other words, the excess population. They were proof of a kind of reasoning that Cipolla (1988) defined as 'Malthusian' ahead of its time. For example, in 1580, the Genoese doctor Bartolomeo Paschetti observed that while some, the 'Theologians', considered the plague a divine scourge, others, the 'Naturalists', believed that it carried out an important function: 'they would say that [the plague] was a means that Nature uses

to remove from the world a superfluous number of people, as with fires or floods' (cit. in Cipolla 1988: 300, our translation). In Venice, in 1577, Rocco de Benedetti compared the plague of the previous year to a beneficial bloodletting by nature on a population that had grown out of all proportion (cit. in Preto, 1978: 72). A question not yet considered is whether the pandemics of the seventeenth century, which badly affected also the highest socioeconomic classes undermined this 'positive' view of the voids created by the plague (in Venice, in 1630, 17 per cent of the nobles of the *Maggior Consiglio*, or Great Council, perished and in Genoa, in 1656–57, 40 per cent of the *Maggior and Minor Consiglio*, or Greater and Lower Council: levels of mortality that were, however, lower than those of the overall population; Pullan, 1992: 111). Not much, if we consider what Friar Antero Maria di San Bonaventura wrote in 1658:

What would the world be, if God did not sometimes touch it with the plague? How could He feed so many people? God would have to create new worlds, merely destined to provision this one [...]. Genoa had grown so much that it no longer seemed a big city, but an anthill. You could neither take a walk without knocking into one another, nor was it possible to pray in church on account of the multitude of the poor, who bothered you not wanting you to be heard by God, if first they had not been heard and their wishes granted [...]. Thus it is necessary to confess that the contagion is the effect of divine providence, for the good governance of the universe [...]. [Otherwise] it would be necessary [...] [that the divine providence] decimated [the cities] with war or with hunger, or at least, by making our nature intangible, also made us companions of the aerial spirits, in such a way that we would be able to fly in the air as well as walk on the earth. (Antero Maria di San Bonaventura, 1658, our translation)

Friar Antero failed to realize that the crisis his city had experienced would have far more serious effects on the economy of Genoa than those of the epidemics of the two previous centuries. It is, however, one of the instances when historians, being able to observe the trends over a long period, have a far more privileged observation point than those who witness the event at first hand.

Whatever the opinion of their contemporaries, and with the caveat regarding seventeenth-century epidemics, it seems certain that the epidemics of the fifteenth and sixteenth centuries involved a loss of human capital (in the sense of skills and know-how), which was markedly less than proportional compared with the loss in population. Even in this case, however, the problem remains of establishing whether, nonetheless, the loss of unskilled workers resulted in substantial economic damage. On closer examination, it is a problem of equilibrium. From our privileged perspective, we can affirm

that when the plague did not reach excessive levels of mortality or when, even with a high rate of mortality, it only involved the urban area, sparing the *contado* and thus not depriving the cities of the chance of drawing labour from the countryside and in a short while reacquiring an *optimum* demographic level, then the damages caused by the epidemic were in some measure limited and in the medium term were all, or in part, compensated for by the benefits derived from the re-equilibrium between population and resources and by the improvement in the urban habitat, quantifiable for example in terms of standards of living. If, instead, the relationship between city and the countryside was compromised and the demographic premises for a rapid recovery were lacking (this is what happened in the seventeenth century), then also the loss of labour, otherwise 'useless' or erroneously considered easy to replace, appeared as a loss in human capital that caused lasting damage to urban economies, for example in terms of a drop in the overall product or of a crisis in specific sectors of production.

Consequences for aggregate demand and the labour market

As well as in terms of human capital, we can attempt an interpretation of the differential mortality of the sixteenth-century epidemics taking into consideration the consequences regarding the different components of aggregate demand. The crucial point here is to ask: who demands which goods? If the urban poor (but not the rural poor) die, we must expect an increase in the availability of foodstuffs, and consequently a decline in cereal prices on urban markets. However, it is sufficient to glance at Figure 2.5, shown in the previous chapter, and to observe what happens in the years following 1576, to realize that this is not so. The deflationary effects of the epidemic on urban markets, if there are any, are only short-lived, and the abundance of food available to the cities is quickly counterbalanced by the immigratory flows from the countryside, as in the case of Venice, always after 1576 (Pullan, 1964; Preto, 1978: 132). Far more frequently, in fact, instead of lowering prices, the plague ended up causing shortages and hunger, because of the interruption of trade and of the movement of supplies between the countryside and the city, and between different agricultural systems. Only in the case of the worst pandemics (like that of 1630), did the plague profoundly and lastingly alter the overall supply of food resources, reducing the demographic pressure on resources and improving standards of living (Malanima, 2002; Malanima and Capasso, 2007; Alfani, 2010a), as well as influencing the organization of production in the countryside and perhaps stimulating the introduction of agricultural innovation (Levi, 1991). However, they are processes that are difficult, if not impossible, to analyse from the data available for urban markets.

So the plague, if it did not actually improve the standards of living of the most disadvantaged groups, neither did it compromise the profitability of

the agricultural products grown for the market, giving the peasant farmers an opportunity to take advantage of the urban population, for once disadvantaged by circumstances. In Verona, at the first signs of the plague in 1575–77, the peasants not only stopped supplying food to the city, but also suspended payment of rents, leases and debts, and in Padua the country folk constructed thousands of wooden and straw huts to rent to the fleeing city dwellers. The evacuees were then provisioned *in loco* by a system of small markets, where the food that was usually sent to the city was sold at exorbitant prices (Preto, 1978: 29).

If the demand for foodstuffs remained very high, what happened in the case of goods with higher added value, and in particular manufactured articles and luxury goods produced in the system of urban guilds? Generally, the poor were not among the buyers of such products, simply because they were unable to afford them. A 'plague of the poor', then, had very little effect on the aggregate demand for locally manufactured goods; the same can be said for imported products that fed medium- and long-range trade. The case of a 'general plague', impervious to social rank and to the standards of living of those infected, is different. This, as well as reducing the level of demand for goods with a higher value added,⁵¹ had deleterious effects on the supply side, destroying skills and know-how. In such a case, the epidemic caused imbalances in the production system, which required in subsequent years a difficult rebalancing between the level of aggregate demand and the level (and quality) of production. What happened instead on the labour market? At least in this case we might expect that the reduction in labour led to an increase in salaries and an improvement in the conditions of the most underprivileged groups, determined by an increase in buying power even in a regime with stable prices. As far as we know, the wages of all kinds of workers tended to increase considerably after the Black Death in the fourteenth century, provoking differing reactions in various cities in Italy and in Europe, at times involved in keeping the new trends in check by regulating the labour market, at others more concerned in maintaining public order and avoiding any further haemorrhage of skilled workers, aiming instead to attract others from nearby towns (Cohn, 2007).

In the case of the sixteenth-century plagues, the situation seems to be a little different. If, after the epidemic of the 1570s, cities like Venice tried in all ways to attract skilled workers, even in opposition to the powerful urban guilds (Preto, 1978: 117–18),⁵² the fact that the countryside had been spared the contagion, meant that there was an abundant supply of unskilled labour available. So, after the plague, while the wages of the master craftsmen saw a definite rise, those of the semi-skilled or unskilled remained stationary or saw only a modest rise (Pullan, 1964: 414 ff.). Therefore, within the segmented labour market typical of the *Ancien Régime* (Grenier, 1996: 245–55), this kind of situation could lead to a growing inequality in income. Also from this perspective, the great epidemic of 1630 would have profoundly

different consequences in comparison with the sixteenth-century plagues. Affecting the countryside as much as the city, it would cause a shortage also of relatively unskilled workers. So, at least for a time, the 'workmen' would have the upper hand, and manage to impose their conditions on the merchant-entrepreneurs who employed them, perhaps contributing in this way to aggravating the crisis of the Venetian economy, already subjected to various kinds of strains (Pullan, 1964: 422).

If, then, we examine the sixteenth-century plagues from the point of view of aggregate demand for goods, of human capital or also of labour costs, we must come to the conclusion that the negative consequences on the economy were limited in comparison with those of the fifteenth and above all the fourteenth century, not only because the contagion was less serious and not as widespread (with the partial exception of the Plague of San Carlo), but also because the social (or even 'class') connotation of the epidemic limited the loss of skills and reduced the impact that it had on some crucial components of aggregate demand. What is more, contemporary observers stress the positive effect on urban environments of these slaughters of the poor, solving the problem of overcrowding. This was only temporary, as the flow of country folk very soon re-established the pre-existing situation (with, though, the advantage for the urban economy of making abundant labour available at low cost). This circumstance is due to the mainly urban nature of sixteenth-century epidemics. When, in 1630 and in 1656–57, the pandemic involved both the countryside and the cities (Alfani, 2010b, 2011b), the consequences for the demographic situation and on the production systems were far more serious, for a long time undermining the vitality of the Italian economies.

An overall appraisal of the biological situation: new diseases and the remission of the plague

This favourable situation, which saw the sixteenth century as an almost 'happy island', one spared the experience of the worst pandemics, is partly spoilt by the appearance of new epidemic diseases. I have already mentioned one of these, typhus. Syphilis should also be mentioned (it was probably the only serious disease imported from the New World, in an extremely unequal exchange),⁵³ as it appeared in the history of Europe at the time of the Italian Wars, when an epidemic broke out in 1494 in the French army led by Charles VIII in Italy to conquer Naples. Among the troops were Spanish mercenaries who could have come into contact with Columbus' companions. Like the *castrense* typhus and the plague, syphilis, a venereal disease that affects men far more than women, followed in the wake of the armies⁵⁴ and the prostitutes accompanying them (in Charles VIII's army they numbered 8000, about one in every five soldiers). At its outset, syphilis was able to kill fairly quickly, in just a few months, during which the victims, gradually covered

in pustules and ulcers, suffered atrociously (Lobdell and Owsley, 1974; Oriel, 1994; Cosmacini, 2006). Like petechial typhus, the first accurate description of syphilis and even its name is owed to Girolamo Fracastoro, who in 1530 dedicated to it the poem '*Syphilis seu morbus gallicus*' (Cosmacini, 1988: 103–4, and 2006: 67–70; Oriel, 1994: 13–16). Previously, the disease was known simply as 'the French disease', at least in Italy: the French preferred to call it *mal de Naples* or *maladie italienne*. Syphilis, however, is a classic example of reciprocal adaptation between human beings and the pathogen agent, as even prior to the mid sixteenth century, it seems to have mutated into the chronic disease that still exists today, perhaps better adapted to spreading widely among the population (Oriel, 1994; Diamond, 1997; Livi Bacci, 2000). In the meanwhile, at least according to one estimate, it reaped in Europe 20 million victims in just a few decades (Cosmacini, 2006: 57).

Whatever the reasons for the mutation of syphilis and whatever the origin of this disease or of petechial typhus (it has been suggested that both were present in continental Europe well before the sixteenth century), certainly the first half of the sixteenth century was a period characterized by an increase in the variety of epidemics, counterbalanced, though, by the comparative remission of the plague. However, the latter is of such great importance in determining the life expectancy of populations in the past, that overall we can consider the sixteenth century, at least in the case of Italy, a period when the epidemiological picture was definitely more favourable to man compared with either the previous centuries or the following one.

Although relatively benign, the sixteenth century is dotted with extremely serious pandemics at a local level. However, it was almost always possible to rapidly fill in the voids opened up in the urban populations by drawing on the demographic forces of the mainly spared rural areas. A feature of demographic, social and economic systems is their exceptional ability to recover even after the most serious mortality crisis. This is something that is now well known from a demographic point of view (Del Panta, 1980; Alfani and Gourdon, forthcoming), but nevertheless still presents complex aspects that remain to be explored. In the case of plague, in particular, the question is what were its effects on the distribution of property, considering that, according to a classic theory originally put forward by David Herlihy (1967), the Black Death of the fourteenth century caused in the medium and long term a lasting increase in economic inequality. This was due to the effects of hereditary mechanisms of an egalitarian type that, through breaking up great estates into many smaller properties, apparently allowed (in the situation of confusion, psychological-cultural suffering and social and economic breakdown following the reappearance of the disease in Europe) the cornering of lands and property by a few profiteers with large amounts of cash. Recently, it has been suggested that it was precisely as a reaction to these unwanted effects of the plague that Italian families in the fifteenth century began to make wide-scale use of socio-juridical means to

protect the integrity of their patrimonies, for example the *fidei commissum* (Leverotti, 2007).

On closer examination, the effects of the plague on economic inequality and on inter- and intra-generational distribution of goods are extremely complex, and it is not possible to analyse them in detail here. I will, therefore, merely note that some studies suggest, first, that in the Late Middle Ages and during the Early Modern era, the levels of inequality show exceptional resilience to mortality crises and are little or not at all modified by the crises (unlike what seemingly happened in the fourteenth century; Alfani, 2010c, 2010d). Second, that this substantial protection from further sharp increases in inequality was largely the fruit of those systems in defence of patrimony (*fidei commissum*, primogeniture, joint inheritance) that ostensibly would in no way seem to be aimed at promoting economic equality (Alfani, 2010c). Obviously, this does not mean that on an individual level the epidemic was not so much a risk as an opportunity. In fact, at the time of the Plague of San Carlo, there was no shortage of observers who pointed out the enormous wealth accumulated by some 'fortunate' families who benefited from the death of many of their relatives (Preto, 1978: 131). Certainly the Church was also to benefit, as in the new post-Tridentine devotional climate its patrimony grew with each epidemic (Alfani, 2010d). However, taking everything into account, the sixteenth-century plague seems, once again, to have lost part of its capacity to affect basic economic structures.

4

Winners and Losers

The wars, famines and plagues of the sixteenth century did not affect the whole of the Italian Peninsula to the same extent. In the first part of the century, during the Italian Wars, different regions were involved in various phases of the conflict. The Kingdom of Naples, for example, the main objective in the first two French campaigns (1494–95 and 1499–1504) was almost completely spared in the following decades. The famines in the decades at the beginning of the century, which the events of the wars often helped to exacerbate, had mostly a local or regional impact. Even the great famine of the 1590s, while in some way involving the whole of Italy, was hardly felt in the Alpine, Prealpine and Apennine regions, and did not fail to benefit some cereal-growing areas where there was less demographic pressure on resources. The plagues and the other epidemics of the century were delimited events, including the most serious one, the Plague of San Carlo of 1575–77, which affected only a part of north-eastern Italy and was concentrated in the cities, sparing most rural areas. The choice here, methodologically innovative, to map the main catastrophic events using an extensive demographic database, has already made it possible to put forward some hypotheses on their economic consequences, hypotheses that I propose to elaborate, examine and link together in a single interpretation in the second part of the book.

If, from a territorial and geographical perspective, the sixteenth-century catastrophes affected the Peninsula unequally, the same can also be said for the social, economic and professional groups that inhabited it. Neither War, Famine nor Plague, whether taken separately, or when they acted in concert, showed that trait of ‘great equalizer’ usually attributed to at least one of them: Plague. The main victims of the great battles of the century were poorly trained and freshly recruited troops, normally coming from the lowest classes of society. Civilians certainly suffered during the wars, and especially during sieges, but also in this case specific socioeconomic groups, the poor and the ‘useless’ *in primis*, were affected far more seriously than the others. These were the same groups destined to be the victims of the century’s great

famines, in which another discriminating factor is apparent: the work of the food-provisioning institutions and that of the governments, whose aim was to keep the meagre food resources in the cities, at the expense of the rural areas. Even the plagues, at one time universal scourges, inspiring countless iconographic representations (triumph of death, macabre dances) in which the rich appeared among the victims on a par with the poor, and ecclesiastics on a par with lay people, had taken on a clear social connotation, becoming 'plagues of the poor' and – at least according to the medical and civil authorities – the poor were even the cause and primary agent of the contagion. Besides, the sixteenth-century plagues, unlike the famines, affected cities more than rural areas. As a result, they clearly differed from the previous great epidemics of the fourteenth century and the ones that would follow them in the seventeenth century. Given the different distribution of skills in sixteenth-century Italian societies, I have argued that the loss of human capital due to mortality from disaster was proportionately much less than the demographic losses: a factor that partly, and certainly in the case of the plague, is in contrast with the previous two centuries.

If therefore not all the areas, nor all the socioeconomic groups, suffered to the same extent on account of the disasters of the century, paying a very unequal (demographic and economic) price, it is perhaps less evident that some territories and entire states had much to gain, too. Among those who gained we can also distinguish communities having some common characteristics, foremost among them were many of the century's new capitals, as well as lucky individuals and specific economic elites. Examples of the latter are the wealthy landowners for whom the famine of the 1590s offered an opportunity to create or further extend their huge estates, or the great bankers, who were an essential cog in the complex mechanisms of financing the Italian Wars first, and then the defence of the Spanish Empire. Some of these issues have already been dealt with, but all merit systematic re-examination.

The purpose of this chapter is to consider in depth the calamities as factors in the redistribution of wealth and economic advantages. From this standpoint the calamities created in sixteenth-century Italy both winners and losers, partly by putting to the test the staying power of institutions and economic and social structures, and therefore from time to time privileging those who were more capable of weathering the crisis, but partly due to fortuitous or uncontrollable circumstances. For example, it would be very difficult to argue that the states and cities struck by the Plague of San Carlo of 1575–77 were not as prepared to combat the spread of the contagion as those that were spared. Indeed, among the urban centres where the mortality was highest were some (Venice, Milan) that, as far as public health was concerned, were at the forefront and of the highest level. This is why, on a methodological plane, I do not propose to give an 'explanation' for the different trajectories that emerged during the century or, at least, not in a systematic

way, but only as regard to specific cases and issues. I intend instead to provide a description and a general interpretation of the redistributive effects of the events that occurred in the Peninsula, insofar as it is an essential step both in order to understand fully the implications of these events, and to attempt a comprehensive evaluation of their consequences, the latter being a task left to the final chapter. These effects sometimes concerned whole states, sometimes specific communities and sometimes individuals. These are the three distinct levels of analysis that will be examined in that order. However, it will be the first two that are emphasized, not only to draw greater attention to the importance of institutional factors, which it will only occasionally be possible to take into account in the final analysis of the underlying trends, but also because the fates of individuals, taken separately or as members of social, economic or professional groups, have been discussed in previous chapters.

Redistribution among states

The historiography inspired by the *Risorgimento* (the movement that led to the Italian unification in the nineteenth century) has promulgated and established the idea that during the Italian Wars there was 'an Italy' that was 'defeated'. Inherent in this idea is first of all the teleological prejudice that the Peninsula should unite, and that not having succeeded in doing so in time was the cause of its economic decline and of foreign domination, but that, in any case, its destiny was clear, and unification was only postponed, albeit for three centuries.

Studying the question from the point of view of the states and small city states, which at the end of the fifteenth century shared the Italian territory, it is however clear that this kind of thinking was quite irrelevant to the mindset of their princes. It was certainly not in line with the policy of the balance of power established following the Peace of Lodi (1454) and whose most famous advocate was Lorenzo the Magnificent and it was equally certainly irrelevant to the ambitions of those small embryonic states, frequently *aderenti* (quasi-satellites) of bigger and more powerful ones (such as the small state of Carpi, belonging to the Pio family, and the county of Mirandola, belonging to the Picos, with respect to the Estense Duchy¹). Their main concern, even more than increasing their own domains and resources, was to preserve their political and administrative autonomy.² Also note that, in order to describe the Italian situation, over the last decades historians have developed the idea of 'regional state' subject in the Early Modern Age to those same forces of transformation that were besetting the greater political entities on the other side of the Alps and that therefore deserves specific study (Chittolini, 1979; Fasano Guarini, 1983; Capra, 1999).

For many of these states (regional or subregional), the Italian Wars marked the end of their independence. The Duchy of Milan and the Kingdom of

Naples became Spanish possessions; after the Battle of Pavia (1525) the Pios, the seigneurs of Carpi (guilty of having backed the French), were deprived of their state, which was assigned by Charles V to the Estes; Bologna and its territory were incorporated in the Papal States and so on. In the same way, new autonomous states appeared, the main one being the Duchy of Parma and Piacenza, very much coveted by the Farnese pope Paul III for his son Pierluigi, *condottiero* of the Papal armies.

These and other similar dynastic and institutional situations would suggest, then, that on a demographic and economic level it is more consonant with the political, social and cultural situation of Italy of that time to assess the trajectories of individual states, if not individual localities, rather than attempting an anachronistic 'national' history. Actually, during the Italian Wars, it was the largest states in the Peninsula that ran the greatest risks, while the medium-sized and small ones often managed to keep afloat by exploiting their particular capacities and often even making substantial gains. They were, in the first place, the homes of those whom Braudel (1986: 47) defined as 'lucky soldiers', otherwise called by Fueter (1932: 356) and others 'the *condottieri's* states'. One example will make this clear. In the Battle of Fornovo (1495), the French led by Charles VIII, found their passage blocked by the army of the Italian League led by Francesco Gonzaga, Marquis of Mantua. Of his 25,000 soldiers, 5000 were paid by Milan, 20,000 by Venice and none by Mantua (Mallett, 1983: 246). Gonzaga himself was given a stipend by the Republic (as Captain General of Venice and Commander-in-Chief of the League's army) with a typical *condotta* (consolidated military contract), and his duchy had not officially joined the alliance.

The Gonzagas, both the family's main branch as well as the minor ones, are certainly among the names at the top of the list of those who profited from the Italian Wars (I will later examine the case of Vespasiano Gonzaga, Duke of Sabbioneta). The *condotte*, for a long time one of the main specializations of the family (Mallett, 1983; Tamalio, 1998), were for many years a very important source of income.³ Growth in wealth and prestige of the noble family was accompanied by the economic and demographic growth of its possessions, determined both by the relative security that distinguished them, and by a real 'demographic policy' actively pursued by the princes (Corritore, 1987, 1996). For this reason and since the system of *condotte* frequently involved the enrolment on their own territory of troops and war experts to be put at the service of the person engaging them, the *condotte* were not merely a personal income of the seigneur, but rather an economic asset for the whole state.

The Gonzagas and their subjects were certainly not alone in seeing the *condotte* as a source of handsome profits – since antiquity war had been an 'honourable means of acquiring riches, far more suitable and efficacious than risky commerce' (Cattini, 1988a: 31, our translation). Among the great Italian families who during the Italian Wars kept up the age-old

tradition of selling their military know-how at a high price were the Orsinis, the Colonnas, the Montefeltros, the Farneses, the Medicis and the Della Roveres. For many of them, the consolidation of the Spanish presence in the Peninsula continued to provide good opportunities throughout the second half of the century (Hanlon, 1998; Donati, 1998). For example, in 1582, Francesco Maria II Della Rovere, Duke of Urbino, received from the treasury of Philip II of Spain 12,000 gold scudi for having supplied mercenaries, and this was to continue in the following years. The Della Roveres had been in the service of the Spanish for many years because, according to the Venetian ambassador, Matteo Zane, in order to avoid the bankruptcy of their state, the Dukes of Urbino had to come to an agreement with some power and be hired by them (Matteo Zane, cit. in Paci, 2005: 44). The budget of the Duchy of Urbino depended heavily on the *condotte*, at least since the time of Federico of Montefeltro (Mallett, 1983: 232) who, towards the mid fifteenth century, as Captain-General of the Italian League, personally received the enormous sum of 45,000 gold ducats in times of war (of a total *condotta* of almost 120,000 ducats, to arm 600 men-at-arms and the same number of foot soldiers) and 25,000 in peacetime (of a *condotta* reduced to 65,000 ducats; Paci, 2005: 44).

If, therefore, for the whole of the sixteenth century the system of *condotte* continued to be an excellent opportunity for enrichment (as well as for political consolidation), it has to be said that compared with the previous century, some of the principal families of *condottieri*, having for some time obtained lands, titles and investitures, also ran the risk of losing them either entirely or in part in the complicated situation brought about by the Italian Wars. This was the case of the Este family, who for many years were deprived of large portions of their possessions, like other seigneurs who suffered serious consequences when their territories were repeatedly the theatre of military actions.

This polarization of the fates of small and medium-sized Italian states can be illustrated, at least with regard to northern Italy, by referring to the usual database of demographic series, which provides data for some of the political entities mentioned so far, as also for many of those that I will be dealing with in the following pages. In particular, the database makes it possible to obtain a rough estimate of the extent to which the Italian Wars damaged the populations of the different 'states' (here understood as all the territories subject, for various reasons, to one particular lord), bringing to the fore, within the overall reconstruction of the dynamics of the Italian population that this book is gradually building, that political-institutional element on which the extent of the participation in the conflict of different parts of the Peninsula largely depended. For this purpose I will formulate a simple Malthusian hypothesis: inferring that immediately after the Peace of Cateau-Cambrésis (1559), the demographic recovery as reflected by the increase in births was directly proportional to the demographic damage of

the war (in terms of deaths and temporary or permanent migrations). It is obviously a rudimentary method, which is in no way a supplement to complete demographic reconstructions of population movement per state (reconstructions that are to date completely lacking and made extremely complicated by the paucity of data from the sixteenth century relating to deaths), but has the considerable advantage of enabling an appropriate choice of the periods to be compared.⁴ The aim is to supply simple orders of magnitude sufficient, however, to highlight significant differences in demographic dynamics.

If, therefore, we compare the average births in the three-year period of 1559–61 with that of 1587–89 (on the eve of the great famine that interrupted the growth cycle following the Peace of Cateau-Cambrésis),⁵ we find at opposite extremes the Duchy of Mantua, which shows less growth than all of the others (around 10 to 20 per cent) and the Republic of Genoa, where in many communities increases were around 100 to 200 per cent. This polarization closely corresponds to the war events: the territory of Mantua, as has been seen, was largely spared by the conflict (therefore allowing less margin for recovery once peace was restored), while the Republic was repeatedly conquered and on many occasions changed hands, becoming an important entry point both for the Duchy of Milan and for Tuscany. The capital itself was sacked in 1522 (Costantini, 1978: 5). Increases not unlike those of the Republic of Genoa are to be found for another highly contested territory, which in 1545 would become the Duchy of Parma and Piacenza, an extremely important military transit point, first a Papal target and then a theatre of conflicts in which the Farnese dukes were involved.

The Republic of Genoa and the Duchy of Parma and Piacenza have in common the fact of being areas that were sorely tried by the war between France and the Empire even in its final phase (after 1535) that, as will be recalled, mainly involved other parts of Europe. Unfortunately, as the data on demographic movement related to the first decades of the century are extremely scarce, it is not possible to make comparisons with, for example, the years before and after the Battle of Pavia in 1525. This is why, in interpreting the data related to the differential demographic impact of the Italian Wars, we should take into consideration that, by 1559, many of the areas involved in the first military campaigns had already benefited from some decades of peace.⁶ Actually, as the next chapter evidences, in northern Italy the decades prior to Cateau-Cambrésis from a demographic point of view seem to be characterized by stagnation, which, however, does not exclude different kinds of conduct on the political-institutional scale considered here.

State entities like the Duchy of Ferrara, the State of Milan and the Duchy of Savoy are in the intermediate band, with increases in the level of births per community of around 20 to 40 per cent. These three cases are all areas actively involved in the Italian Wars, mainly in the first phase, except for

the Duchy of Savoy, most of which remained under French control until 1559, and was involved in military operations until shortly before the final peace (the siege of Ivrea in 1554 is a case in point). However, the conciliatory policy of the French occupiers (Stumpo, 1986) probably contributed to reducing the migration of the population towards less contested areas.

The states mentioned so far certainly do not exhaust the list of autonomous or semi-autonomous political entities in northern Italy. I also have information for some of the smaller ones, but in these cases there is just one series, corresponding to the 'capital'. So, in the Principality of Correggio we find between 1559–61 and 1587–89 an increase of 83 per cent; in the County of Mirandola one of 53 per cent; in the Duchy of Sabbioneta 12 per cent; and in the Marquisate of Finale 5 per cent. Generally, it is easy to interpret these differences in the light of involvement in the wars. Correggio, which pursued a policy of allegiance to the emperor to the bitter end, was brutally besieged in 1557–58 by troops of a new anti-imperial 'Holy League',⁷ led by Ercole II of Este. Mirandola, under the seigniorship of the Pico family, raised to dukedom in 1617, was actually one of the main reasons for the disturbances in international order during the first half of the sixteenth century, so much so that it merited a place in Braudel's *La Méditerranée* (1979, vol. 3).⁸ The city changed hands on several occasions and was the protagonist of famous sieges: in 1510 at the hands of Pope Julius II, and once again in 1551, when it was besieged by Pope Julius III.

At the other extreme, the Duchy of Sabbioneta, belonging to a minor branch of the Gonzagas, was only slightly touched by the conflict, which, moreover, made Duke Vespasiano enormously wealthy. The case of Finale is more difficult to assess, as in 1558 the subjects of Alfonso II Del Carretto rose up and chased out their seigneur and sought help from the Republic of Genoa, which for centuries had claimed rights over the Marquisate. The Genoese sent troops to Finale, but the Del Carretto, relying on their friendship with the Dorias and the good offices of the Spanish stationed in Milan, quickly managed to regain possession of their fief (only to lose it some years later to the very same Spanish).⁹ The series of baptisms in Finale throughout the entire century not only shows a decidedly lower growth compared with the standard in northern Italy, but the average for 1587–89 is reduced by the exceptionally low value found for 1587; if this were excluded, the increase in the level of baptisms would appear to be much greater, around 35 per cent.

The measurements related to the scale of recovery presented so far show a variety of demographic trajectories due, at least in part, to the varying effect of the Italian Wars on the Peninsula. In the next chapter, the different demographic (and economic) dynamics of various regions of northern Italy will be explored within a broader temporal perspective and from different points of view. Here it is necessary to stress that the political-institutional factor is an important component of this variability, even though it is too

often ignored by those who adopt a historical-demographic perspective. While it is true that some events, like the worst famines or plagues, tend not to respect the boundaries between fiefs and states, nevertheless those same boundaries have an effect on different kinds of crises. Besides, as I argued in previous chapters, institutions count and can play a very important role. So the sanitary cordons between states can affect the territorial extension of an epidemic, and the different conduct of food-provisioning institutions and of the government help to attenuate rather than exacerbate the local severity of the food crises, including those that hit large areas. The importance of institutions is even more evident in the case of war: the particular Italian situation, characterized by a highly fragmented political scenario, accentuates rather than reduces the importance of the smaller state entities, as it puts them in a position of arbitrage, of selling their services to the highest bidder, of remaining neutral in a world gone mad. The differences between local histories are therefore magnified, both from a demographic and from an economic point of view.

It is worth presenting an overview of local trends in the 30-year period of 1559–89, given its key role in any interpretation of the consequences of the Italian Wars in the medium and long term. Figure 4.1 compares the numerical consistency of the generations ‘centred’ on the years 1560 and 1587.¹⁰ As well as offering an impression of an almost generalized demographic growth, the map can also be read ‘contrariwise’, suggesting greater suffering

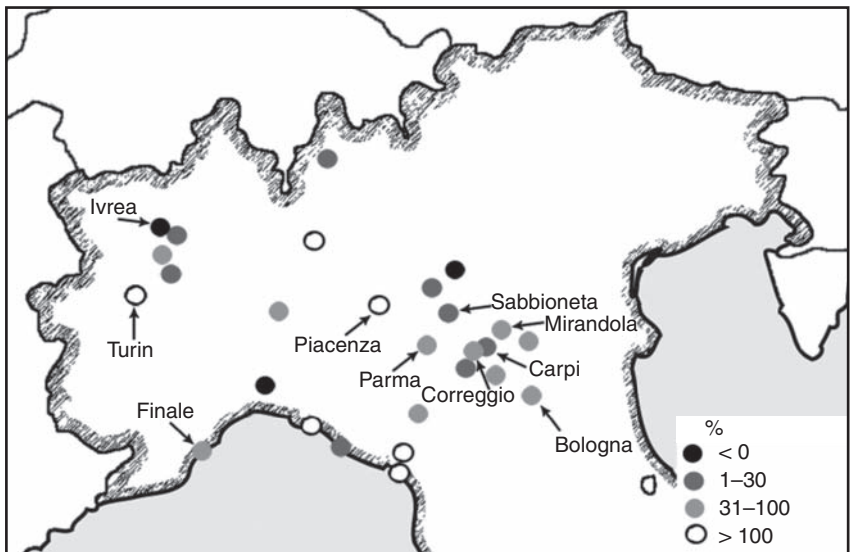


Figure 4.1 A comparison between the generations of 1558–62 and 1585–89 (percentage change)

in the years prior to 1560, in the case of those that later show more rapid growth. From this perspective, the state-by-state analysis just made is confirmed, although the behaviour of specific communities, like Turin, has to be interpreted also in the light of political-institutional changes (the promotion to a capital city), which I will document shortly. To facilitate the interpretation of the map and make it a more useful aid, I have highlighted some of the communities mentioned throughout this chapter.

If the movement of demographic variables can be taken as a reference to evaluate the degree of each state's involvement in the events of the war (the cause, in certain conditions, of catastrophic mortality and temporary or permanent migrations), other aspects should also be considered in order to understand fully the differential economic consequences of the wars. Enrico Stumpo has already pointed out that the axiom that war equals economic crisis and peace equals development is misleading, to say the least, if not false (as suggested, for example, by a comparison between the 'bellicose' Duchy of Savoy and the 'peace-loving' Grand Duchy of Tuscany in the two centuries following the end of the Italian Wars; Stumpo, 1988: 63), and generally speaking European historians for some time have recognized the possibility that war can have extremely positive economic effects on the fortunes of specific states (Kamen, 1976).¹¹ Here I will focus, in particular, on its capacity to redistribute wealth on a territorial scale. I have already mentioned the fact that some Italian states, usually the smaller ones, had much to gain, first from the Italian Wars and then from service to the Spanish Crown: this is certainly true of the Duchies of Mantua and Urbino but also, for example, of Parma and Piacenza, whose seigneur, Alessandro Farnese, in the closing decades of the century figured among the principal generals of the Spanish army, and was actually appointed Governor of Flanders and Burgundy. For other states, however, in particular those whose aim, at least in the first phase, was to play an autonomous role, the growth in the size of the armies during the Italian Wars at the outset of the 'military revolution'¹² was a serious financial problem.

Let us take the case of the Este family who, having lost Modena and Reggio, conquered in 1510 by the anti-French league led by Pope Julius II, employed a good deal of their resources in winning them back (Cattini, 1988a). While at the beginning of the century the expenses involved in paying men-at-arms amounted to about a quarter of the duchy's budget, in 1511 alone the extraordinary expenses for the war equalled more than 150,000 Ferrarese lire, an enormous sum for a small state, whose total income for that year had amounted to just 115,000 lire, obliging Duke Alfonso I to use his own assets (such as freehold property and family jewels) and to go heavily into debt. After they had regained their cities, the Estes, towards the end of the Italian Wars, once again found themselves sorely tried financially when, between April 1557 and May 1558, they had to pay 1,620,742 Ferrarese lire to field a large army as part of the Holy League. In this case, too, the duke

(Ercole II) had to sell off more than forty of his properties and resort to mortgages and loans to obtain the necessary resources. It would appear no mere coincidence that by the end of the century, the money for military expenses amounted to just 3 per cent of the duchy's budget and that Alfonso II maintained just a small number of professional soldiers (about 500) supported by a low-cost territorial militia: 'So, in the mid-sixteenth century they began to emerge from the medieval war economy, that is the economy of the military *condotte*, on which in no small measure were founded the fortunes of many ruling families in the Po Valley and among them those of the Este, to arrive, far less pretentiously, at war (purely for defence) conducted economically' (Cattini, 1988a: 39, our translation).

In practice, the enormous cost of a modern army made it extremely difficult for a small duchy to put an efficient armed force in the field, so a reduction in military expenses amounted to an admission of only being able to play a secondary role on the military level, in a situation in which moreover Ferrara could benefit from the *Pax Hispanica*,¹³ off-loading part of the financial burden of their defence onto the policy of the balance of power pursued by the Spanish. A similar situation was common to many of the formally independent political-territorial entities that studied Italy. It will be recalled that already towards the middle of the century, practically only the Republic of Venice and the Duchy of Savoy were in a position to mobilize an army able to take independent action against the great European states. The difficulty did not lie in the ability to find men, as many areas of Italy continued to secure for themselves rich *condotte* paid by the Spanish and to supply numerous and well-paid recruits to their *tercios*. Rather, the problem was one of having the necessary financial means to pay them themselves. Many among the minor princes, who harboured foolish ambitions, did nothing but condemn their states to financial ruin and, what is more, risked ridicule like Vincenzo I Gonzaga, contemptuously nicknamed 'the Pasha of Mantua' for the luxury paraded in the Hungarian campaigns at the end of the sixteenth century in the emperor's retinue (Spagnoletti, 2003: 42). The huge sums spent on military expeditions, to which were added the onus of a 'cultural policy' of incredible splendour, left his duchy severely bankrupt, despite the treasure left to him by his predecessors and especially by his father Guglielmo (Burattelli, 1999; Romani, 2005).

The situation of the Republic of Venice was very different, as with the war of Gradisca of 1615–17, it not only dared to challenge directly the Habsburgs,¹⁴ but for the whole of the seventeenth century it was able to hold its own against the principal Mediterranean power, the Ottoman Empire, and to finance extremely important enterprises like the exhausting war of Candia (1645–69). According to one estimate, the latter absorbed in all the almost incredible sum of 125 million ducats (Pezzolo, 2006: 80). For their part, the (relatively) powerful Savoyes in the seventeenth century adopted an original solution, organizing the entire duchy as a 'new kind

of company of mercenaries' or a 'mighty war machine' for hire (Stumpo, 1979: 86), financing their own military campaigns mainly with the extraordinary income obtained from their allies as subsidies and succeeding, according to Enrico Stumpo's interpretation, in reconciling war with the economic growth of their own state – if not making it a specific factor of economic and political-institutional development (Stumpo, 1986, 1988). Nevertheless, the interventionist and relatively aggressive policy pursued by the Savoyes meant adopting a wide variety of extraordinary financial measures.¹⁵

Whatever the path actually followed, for any Italian state aiming to remain an important player on the European stage, it was necessary to achieve what, according to Carlo Capra, was obtained by the Republic of Venice, which had succeeded in 'adapting to the unprecedented level of expenditure required to survive as an independent power in an era dominated by great monarchies' (Capra, 1999: 419, our translation), an objective reached only by very few others.

This is not the place to go into a more detailed analysis of the evolution of the tax systems of Italian states in the Early Modern Age, an analysis already undertaken by others (Capra, 1999; Pezzolo and Stumpo, 2008; Pezzolo, 2012), nor to set it in the more complex picture of European trends (Bonney, 1995, 1999; Cavaciocchi, 2008). It is sufficient here to reiterate that the new military requirements provided a crucial stimulus, and that the capacity (or, for the smallest, the mere possibility) of individual Italian states to respond to these pressures determined quite different destinies both in terms of formal political independence and in the actual ability to take action on the international scene. If, then, the innovations in the tax systems, whether introduced or not, significantly contributed to establishing who were the winners and who were the losers in the events that distinguished the sixteenth century in Italy, it also has to be said that the new expenditure requirements had important internal redistributive effects. Typical of the century were certainly the disagreements as regards exemptions, privileges and the general distribution of tax burdens among the communities of a state, and between individual members of each community.¹⁶ The issue is too complex to be dealt with in detail here, so I will merely mention the Duchy of Savoy and the State of Milan. In the first case, the distribution of the *tasso* (which was introduced in 1561 and rapidly became the main ordinary tax of the duchy) was repeatedly an object of discussion and negotiation between central authorities and communities, and exacerbated the internal clashes between those who were exempt (especially ecclesiastics) and those who were not (Stumpo, 1979; Vester, 2000, 2001; Alfani, 2010d). In the second case, the growing burden for the rural communities brought about by billeting troops (the role played by this area within the logistical and military system of the Spanish Empire is to be borne in mind) would lead, at the beginning of the seventeenth century, to the introduction of that 'gigantic attempt at tax equalization' (Colombo, 2008: 70) that was the *Egualanza*.¹⁷

In this chapter dedicated to 'winners and losers', the case of the State of Milan suggests returning to the issues already partly analysed and to recall that Milan, for a long time considered, like the Kingdom of Naples, one of the main 'victims' of the Italian Wars,¹⁸ should instead be seen as a state included, with considerable administrative autonomy, in the wider context of the Spanish Empire (Vigo, 1994). This particular circumstance enabled it to obtain considerable advantages from its key strategic position, in this certainly surpassing Naples.

For the State of Milan, then, the loss of formal independence was in some way compensated for not only by the opportunities made available to its inhabitants, but also by the huge sums spent in its territory for military purposes. From a redistributive point of view, it should be pointed out that these investments were mainly financed by the *soccorsi* (military aids) sent from other parts of the Empire (Sella, 1979: 118–19), at least until the early decades of the seventeenth century. In 1639, the *soccorsi* still covered two-thirds of the military expenditure sustained by Spain in northern Italy; only later would they be drastically reduced, causing growing problems for the governors of Milan and a rapid increase in the tax burden on Lombardy (Maffi, 2007). Just as was happening in Piedmont in those same years, albeit in a profoundly different manner, also in Lombardy the war or, rather, strategic services and defence in general were mainly financed by huge flows of ready money from other parts of Italy or from Europe. The other great Italian state included in the Spanish Empire, the Kingdom of Naples, found itself in an opposite situation. It had to supply frequent *provisiones de guerra* taken from its territory to be spent elsewhere, very often in Lombardy where, for the whole of the second half of the sixteenth century and longer, military aid arrived from Naples amounting to the sum of hundreds of thousands of scudi,¹⁹ as well as considerable supplies of victuals and men (Galasso, 1994: 306–13; Rizzo, 2007a: 496–507). If it is that Milan acted as a shield to the Kingdom of Naples, and in a far more explicit way than that in which the *Pax Hispanica* indirectly provided a defence for the Estense Duchy and other Italian political entities,²⁰ nevertheless here we find a factor favouring the entrenchment of that north–south divide, both economic and political, that the crisis of the southern economies during the seventeenth century would further accentuate:

From the Spanish-Habsburg and Milanese point of view Lombardy was an indispensable outpost that guaranteed the security and tranquillity of Naples. From the Neapolitan point of view and the Aragonese tradition, it was in Naples that the basis and support needed to keep possession of Milan were to be found. [...] In the former view, the financial and military sacrifices, as well as those of other kinds, that Naples had to bear for Milan were compensation for the protection and peace the Lombardy front line of the Spanish front ensured to southern Italy, and so were

irrefutable sacrifices. From the latter point of view, it was Milan and the policy of the dynasty that stood to profit from the obligations borne by Naples for the *soccorsi* to Lombardy, and were therefore to be considered a burden, more than compensation for a benefit that Milan and the dynasty offered to Naples. (Galasso, 1994: 309, our translation)

So, in the areas of Italy that had come into the sphere of the Spanish Empire, we come across diverse destinies and a different capacity to exploit the advantages that had been brought about by the political-institutional upheavals in the first part of the century. In the same way, in the second half of the sixteenth century, among the states that remained formally independent, there were those that benefited substantially from the Spanish presence in the Peninsula. This is certainly the case of the small states that supplied the *condotte* and the military services already mentioned, but also, and maybe above all, the Republic of Genoa: the Spanish presence, in fact, coincides with that ‘century of the Genoese’, when the routes of the gold and silver from the New World were determined by the bankers of the Republic, who dominated European finance²¹ (Da Silva, 1969; Ruiz Martin, 1970; Braudel, 1986; Marsilio, 2008).

Redistribution among communities: the role of institutions and economic opportunities

Moving on from the scale of states to that of communities, what must be stressed is that the same upheavals that, from the time of the Italian Wars placed numerous Italian political entities in a position to benefit from or be damaged by the new developments, often had an extremely significant impact also on a micro-territorial scale: not only because of the effect of the mechanisms of the allotment of the tax burden, but also as a consequence of the processes of the redistribution of specific advantages. Mention has been made of many of these processes (for example, the case of Brescia and of other communities in Lombardy and Veneto, where the development of the industry of arms and military supplies was closely linked to Milan's strategic-military role; Hale, 1985; Rizzo, 2000c, 2007b). Certainly worth recalling, then, is the theory put forward by Michael Mallett (1983: 232), which I think can largely be shared. In his opinion, in general, the system of *condotte* determined an almost continual flow of riches from the big commercial cities to relatively minor centres. Thanks to those resources, these centres were able to flourish and develop, in some cases becoming themselves important places of production: witness the already cited cases of Urbino and Mantua between the fifteenth and sixteenth centuries, to which we can add Ferrara, while for the sixteenth century it is enough to mention the more fleeting fortunes of Sabbioneta, which will be analysed shortly. Here, however, I will pay particular attention to a phenomenon typical of sixteenth-century

Italy, one that so far has not received specific attention: the systematic downgrading of cities (large, small and medium-sized), from seats of court to the rank of 'normal' urban centres, and the parallel acquisition, by others, of the status of capital. On closer inspection, in no other moment in Italian history has this kind of process been as common as that recorded during the Italian Wars, with the partial exception of the years of national unification, when, however, there is a kind of selection of capitals to the advantage of one alone, initially Turin (Alfani, 2009d). It is therefore a specific feature of the Italian sixteenth century, the importance of which should be underlined.

In fact, losing or acquiring the status of capital meant a serious institutional trauma, which had grave consequences for the social structure and for the economic activities of a community, as well as having an obvious demographic impact, once more justifying a return to the population as a standpoint from which to observe complex socioeconomic dynamics. Lucio Gambi (1982) already noted that the 'ruling' cities (that is to say, seats of princely or royal courts, senatorial councils and so on, and in any case those that had the responsibility for governance and the organization of territorial states), are the only ones that between the mid fourteenth and the end of the sixteenth century continued almost uninterruptedly to grow in size. This process is even more striking because it took place in a context in which the general urban framework of the Peninsula, now established as the period of the foundation of new cities was (practically) concluded, overall was characterized by a basically static demographic situation. Gambi failed, however, to point out that the localization of these privileged centres was still liable to change: in other words, in comparison with a network of urban centres in which the 'nodes' were now fixed, the localization of the principal ones was not yet definitively consolidated.

During the sixteenth century, on the one hand, we find cities that were downgraded and lost their courts. Milan undoubtedly was one of the main examples, even though it managed partly to compensate for its institutional loss by acquiring a governor and strengthening the Senate; at around the same time, also Carlo Borromeo intervened, revitalizing Milan's role as ecclesiastical metropolis (Vigotti, 1981; Alfani, 2009a: 100–4)²² and endowing it with new functions and institutions, such as seminaries and the University of Brera (Majo, 1995). Naples, the other great city under the control of the Spanish, is similar to the case of Milan. It maintained an even more prestigious political-institutional profile as capital of a 'vice-kingdom' (Galasso, 1994). In Marino Berengo's opinion (1999: 33–7), Naples then became operatively much more a 'capital' in comparison with the period of the Angevin and Aragonese monarchies and in effect the absence of a court did not hinder the urban development of the city, which housed the central institutions of the vice-kingdom, able not only to determine the installation of public officials and administrative personnel, but also to generate a steady stream of users.

Although Milan and Naples were able to offset, in terms of their urban functions and institutional role, the loss of the court and their full role as capital, the fate of almost all of the other former capitals was very different, so that once again we find 'Spanish' Italy in a by no means unfavourable position compared to 'free' Italy. These cities were mainly average-sized, or sometimes small to medium centres, that had been the administrative reference point for those political entities that had lost their institutional independence during the wars and had found themselves included in other states, for example Bologna of the Bentivoglios or Camerino of the Da Varanos or Rimini of the Malatestas, all victim, like Ferrara after 1598, of Papal expansionist policies. Among the principal former capitals, downgraded except in rare cases (such as Bologna, which retained its extremely important urban functions) to the rank of provincial city, was Carpi, the seat of a famous Renaissance court. This is a case worth studying, also on account of the availability of early data concerning demographic dynamics. Alongside this I will present the analysis of another city that experienced a phenomenon of downgrading at a later period, but in any case during the sixteenth century and for reasons that in some way were connected to the Italian Wars and to the events of the first half of the century: Sabbioneta. The relevant series of baptisms that, as usual, will be taken as indicator of the demographic dynamics, are illustrated in Figure 4.2. To highlight the difference in behaviour with regards to the cities that, by contrast, during the century were promoted to the rank of capital, see Figure 4.3, which maps the cases of Turin, Modena and Parma.²³

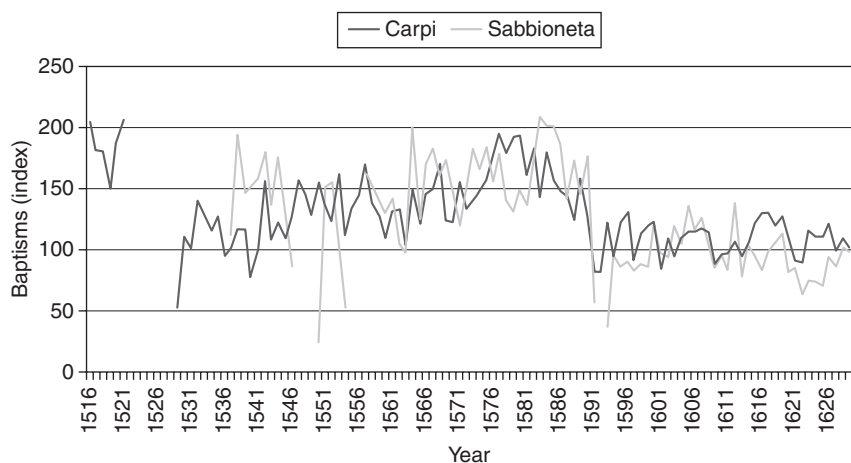


Figure 4.2 Demoted capitals: Carpi and Sabbioneta (indexes, base 100 = average 1610–14)

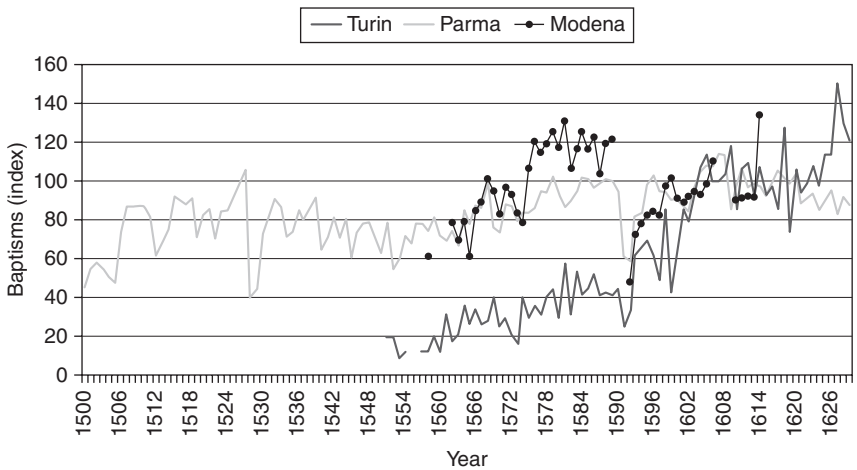


Figure 4.3 Cities promoted to capital: Turin, Modena and Parma (indexes, base 100 = average 1610–14)

Carpi was capital of the principality of the Pio family until 1525, when the defeat of the French at Pavia brought about the demise of Alberto III, who had supported them. Charles V sold half of the principality to the House of Este, who since 1499 had already controlled part of it and who gained complete control in 1527 (Cattini, 2002).

As well as the harsh blows inflicted on more than one occasion by wars and epidemics in the first half of the century, the curve relating to the baptized reflects the loss of the court and of the institutional role.²⁴ The Pios 'with their blood relations, and their husbands and wives, courtiers, *famigli* [families] and soldiers' had to abandon the city (Cattini, 2002: 152), as their presence would have been a risk for the new owners. The demographic/economic impact of the court on a centre with a limited size like Carpi (about 6000 inhabitants around 1520) should not be overlooked. The institution of the 'court', in fact, had a kind of dimensional rigidity in the sense that the volume of the less important courts was not much smaller than that of the more eminent ones and the number of the courtiers of the minor courts did not usually go below 150 to 200 people. Besides, the court had per se an effect of boosting local economy, stimulating trade and production and so indirectly encouraging immigration.²⁵ Furthermore, other institutions moved with it: for example, usually the court was followed by the chancellery (at least in Italy, wherever the seigneurial families operated within restricted territorial areas, in the medium to long term the seat of the two institutions tended to coincide), which meant the establishment *in loco* of the highest and best paid officials and caused a continual influx of people

from all corners of the state, thus having a significant impact on the local economy (Berengo, 1999: 19–20).

Unfortunately, the fragmentary nature of the data relating to 1522–28 prevents us from appreciating the immediate effect of the Pios' expulsion, but it is enough to compare the level of the births for the five-year period of 1516–21 with that of the following years and, in particular, with the decades that follow the great crisis caused by the famine of 1590–93 (from which Carpi did not manage to recover), to have an idea of the damage caused by the loss of the status of capital.

In the second half of the sixteenth century, Sabbioneta experienced a period of splendour that corresponds to Vespasiano Gonzaga's 40-year rule (1550–91), culminating in the elevation of the little state to the rank of duchy (1577). Beginning in 1554, the city was rebuilt *ex novo* at the behest of Vespasiano, who intended to make it an 'ideal city', according to the typically Renaissance utopia of which the most well-known instance is the Pienza of Enea Silvio Piccolomini (Mozzarelli, 1979). I have already had the opportunity to mention the duke as an example of that group of *condottieri* who made enormous profits, first from the Italian Wars and then from the Spanish commissions in Europe. Nominated *Grande de España* in 1558, then Viceroy of Navarre and finally Viceroy of Valencia, awarded with the Golden Fleece a few years before his death, the fortunes of his duchy grew in step with the progress of his career in the service of the Spanish (Mozzarelli, 1979; Bazzotti et al., 1993).

Vespasiano's huge building projects together with the presence of his court in the city helped to make Sabbioneta an attractive destination for those in search of work and security. However, the rapid development was followed by an even more rapid decline: the concurrence of the death of the duke and patron (1591) with the famine of 1590–93 seems to have been fatal for the city. In comparison with the time of Vespasiano, in the early seventeenth century the index of baptisms underwent a reduction of about 40 per cent. The death of the duke entailed a loss of status for the small duchy, as his heirs neither had the ability nor the means to continue his policy of grandeur.

In Carpi and Sabbioneta, as in Ferrara, Urbino²⁶ and all of the other capitals that in the sixteenth century were demoted, the loss of status brought about a socioeconomic crisis whose demographic effects might have remained dormant for some years, but in the medium to long term invariably led to a fall in population. From this perspective the great famine of the 1590s played a key role, which I will come back to shortly.

The medium- and long-term dynamics found in the cities that had recently been upgraded to capital is the opposite to those found in the downgraded centres (Figure 4.3). Let us take for example the case of Parma, co-capital with Piacenza²⁷ of the states with which Pope Paul III Farnese invested his son, Pierluigi, in 1545. According to the juridical formula, the

two cities were equal and separate from each other: the union was personal, in the form of the duke. Actually, Pierluigi had established his residence in Piacenza and it was there that he was assassinated in September 1547. Piacenza was then occupied by the Imperial troops led by Ferrante Gonzaga, governor of Milan, who, however, did not dare to pit themselves wholeheartedly against Parma, too. Ottavio Farnese, Pierluigi's son, thus succeeded in entering Parma and setting up his residence there. The Farnese court remained in the city even after Piacenza was regained in 1556, which was why in the long run it was Parma that reaped most benefits from its position as capital city (Tocci, 1979; Podestà, 1995; Spagnoletti, 2003; Mocarelli, 2008). From a demographic point of view, this was expressed both in a notable increase in population in the second half of the sixteenth century (+65 per cent between 1573 and 1628; Beloch, 1994: 633), and in the speed with which it recovered after the famine of 1590–93.

While Parma found itself benefiting both from the ambitions of the Farnese, who wanted to take possession of the seignory, and from nearby Piacenza's reaction against their rule, Modena became capital in virtue of a complex sequence of events known as *Devoluzione* (devolution), which concluded in 1598 with the restitution of the previous Estense capital (Ferrara) and its territory to the Pope, who had no intention of confirming the investiture of Cesare, illegitimate son and the only male heir of Alfonso II (Marini, 1979; Guerzoni, 2000). The Este kept, then, the only part of the duchy that was an imperial investiture, which included as well as Modena and Reggio, the Garfagnana and the recently acquired territories of Carpi.

Also in Modena, the change in the political-institutional situation triggered off a considerable demographic growth, only partly visible in Figure 4.3, given that the series consulted is interrupted in 1615. In this case, too, Beloch's estimates (1994: 633) are helpful. He calculated that the city went from 15,675 inhabitants in 1539 to 20,505 in 1620 (+30.8 per cent).

Among the Italian cities that in the course of the sixteenth century rose to the rank of capital, the most striking case remains that of Turin, where in 1560 the Savoy transferred their court, previously located in Chambéry. The city at the time was quite small (8390 inhabitants in 1510; Benedetto, 1997: 424), but, once invested with its new role, it began to grow at an extremely rapid pace until it became one of the most important Italian cities. This really remarkable increase, clearly visible in Figure 4.3, is confirmed by the usual state estimates (+71.4 per cent between 1571 and 1612).²⁸

Elsewhere I have been able to analyse in more detail the long-term effects of Turin's promotion to capital city (Alfani, 2008, 2009d). Here it is worth mentioning once again that a similar impressive demographic growth could not have taken place without a constant stream of immigrants. According to Giovanni Levi's (1985) classic interpretation Turin seemingly suffocated Piedmont, not restricting itself to attracting the demographic surplus produced in the rural areas, but in effect arresting the growth of other cities,

in particular those in the western part of the region (it was only later that eastern Piedmont came under the control of the House of Savoy). In the first chapter, examining the case of Ivrea I underlined the problems caused, at a local level, by Turin's capacity to attract and incorporate the provincial elite, especially those belonging to places that due to a change in circumstances were less attractive than in the past. In Ivrea it was the damage caused by the Italian Wars and, later, the decisions taken by the government in consideration of the change in the international context (besides the move of the capital from Savoy to Piedmont, also the consolidation of the Mont Cenis Pass to the detriment of the passes in the Aosta Valley) that entrenched the crisis and, in the long term, put the city on the road to decline (Alfani, 2010d). In Turin, however, those same decisions determined the fortune of a city that otherwise would have stood little chance of becoming much more than a centre of average importance.

The cases of Turin and Ivrea, further examples of those processes of redistribution of the relative advantages engendered by the catastrophic events of the Early Modern Age (in this instance by the Italian Wars), clearly show how the reshuffling of the urban functions brought about by the relocation of the seats of government and by other institutional innovations was able to influence a far larger area compared with the mere area pertaining to the promoted or demoted cities. So the upgrading of Parma and Piacenza corresponded to the reconfiguration of a vast territory, forming a state that had not previously existed, while the move of the capital of Savoy meant the structural alteration of the internal equilibrium of Piedmont and radically altered the economic and social prospects of individuals and of entire communities.

The famine of 1590–93 as a factor of rebalancing

With regard to the specific situation of the sixteenth century, there is still one aspect of the processes of promotion or demotion that requires examining in detail. The loss of the status of capital had some immediate demographic effects, as an initial decline in the population was determined by the departure of personnel such as courtiers and officials with their families, of the seigneur's guards and his relatives and so on, totalling from several hundreds to some thousands of people according to the size of the court, often corresponding to a quite significant portion of the overall population.²⁹ As well as these immediate effects, though, the loss of the institutional role created in the downgraded community a serious sense of fragility, brutally highlighted by the crisis of 1590–93. In those years, both in the demoted and promoted cities there was a sudden decline in births (Figures 4.2 and 4.3). While, however, the new capital cities showed an exceptional ability to recover and in some cases like Turin even accelerated the pace at the end of the famine, in places like Carpi and Sabbioneta, recovery was clearly only partial even at a distance of some decades.

How can this phenomenon be explained? While the presence of the seigneur and his court meant that considerable food supplies were set aside and stimulated trade and internal production, their final departure could not but cause difficulties to broad sectors of the population. However, unlike those who counted on the seigneur's generosity for their main (or only) source of support (courtiers, soldiers, *famigli*, servants and so on), merchants and craftsmen were not forced to leave, and could try to resist any pressure to do so: the emotional ties with the city where one is born and grows up and with its inhabitants, the feeling of security that comes from living in places and among people whom you know, are not to be ignored. In time, though, there are those who capitulate and decide to move: the various series show a slow but steady exodus of emigrants.

With the famine a tipping point was reached. Those who were already in dire straits had to leave in order to survive, while the undecided had to come to a decision, following the example of friends and colleagues. Once the crisis was over there was no return to a provincial city no longer with anything to offer – even less attractive if there were unpaid creditors to face. In contrast, the cities that benefited most from these processes of permanent emigration were those recently promoted, those capitals in rapid expansion where expectations were high and good opportunities abounded. First, the construction of public buildings alone, greatly stimulated by the need to make the new seat of the court splendid (and safe), meant that there was a demand for labour, skilled and unskilled, and a steady flow, or the direct production, of a wide variety of goods. Italian princes were well aware of this, like the Farneses who, at the height of the crisis, made the building of the Citadel of Parma a feature of their economic policy in order to aid that part of the population who was in greater difficulty (Romani, 1978b, 1983; Papagno and Romani, 1982).

Second, once the crisis was over, the local authorities themselves actively intervened to fill in the gaps in the population in the capital city, encouraging immigration because the emblem of power and wealth of the whole state could not remain underpopulated (Fasano Guarini, 1982; Corritore, 1987). As seen in Chapter 3, similar interventions designed primarily to attract skilled members of the population were actuated immediately after the plague of 1575–77 and are a typical aspect of the population policies of the *Ancien Régime*. While it is true that in the years following a crisis, as in the 'normal' ones, urban growth was fed above all by flows of migrants from the *contado*, the rural areas were not able to meet the demand for skills – for example, in the sector of the production of luxury goods or in state bureaucracy – associated with the presence of a court, which created precise social, economic and administrative needs. In the phase of institutional upheaval that characterized much of the sixteenth century, city-to-city migrations, from places in decline to others on the rise, were of considerable importance. This seems to be confirmed by the opposite

demographic trends found among the centres belonging to one or the other category.³⁰ Part of this trend was the very specific case – but in sixteenth-century Italy not at all exceptional – of the flows of population in the courts' retinue.

The analysis of the phenomena of promotion and demotion not only underlines the importance of the local presence of institutions in influencing the long-term demographic and economic-social trends, but also highlights the key role played by the great end-of-century famine in solving imbalances that for years had been latent. In many places the famine was not only a tragic interlude between two periods of demographic growth, but rather it was the opportunity finally to solve the demographic imbalances generated by the harrowing events, whether political, institutional or military, of the first half of the century. In the former capitals, for example, the crisis was the chance to downsize a population that had become too large for the local economic and social possibilities, and bring it back to levels more consistent with the cities' new status.

It was not only political-institutional factors that made many inhabited centres less attractive. Certainly sixty or more years of war had modified the territory,³¹ and there were areas that felt the effect of local factors, such as that around Ferrara where in the sixteenth century, an increasingly serious hydro-geological instability became apparent (Cazzola, 1970). Also from places characterized by a deterioration in the environment people tended to move towards others where conditions were improving, following paths that are still mostly to be explored.³² The fact is that the great famine of the 1590s played a key role in these events, providing a crucial stimulus to permanent migration and accelerating a change that was already underway, a role that until now has been overlooked by historians and that can be understood only by looking at very wide areas. Far from being, as some suggested (for example, Bellettini, 1973; Belfanti, 1984), a kind of 'anticipation' of the crises of the following century, that of 1590–93 should be seen as the conclusion of a century-long cycle, the moment when problems typical of the sixteenth century surfaced and found some kind of solution; only insofar as it 'concluded' a phase, this crisis 'prepared' the next phase.

Thus, as well as having depressing effects on most of the population, the famine helped to redistribute it throughout the territory, in part temporally and in part permanently. At the level of the states or at that of the communities, on the one hand, the famine made visible and accentuated a redistribution of relative advantages already triggered by other factors, on the other hand, it dispensed other advantages on its own account, for example, favouring the mountains to the detriment of the plains, and the areas with more extensive cultivation (but less populated) compared with those with small peasant farms that tended to determine a greater demographic load on the territory. Even more important, however, were its effects on a micro-analytic scale, that is on single families and individuals.

Redistribution among socioeconomic groups and individual opportunities

I have already underlined in the first part of the book that the great calamities of the sixteenth century affected the inhabitants of Italy very unequally: not only in relation to where they lived, but also as far as their socioeconomic and juridical-institutional characteristics are concerned. One category in particular, that of the 'useless' (a much neglected category, for which I have suggested a new tentative definition, based on sources and on the rare references available in the historical literature), proved to be the most badly affected both in times of war and during the worst famines and the most serious plagues, together with another category with which it only in part coincides, that is of the 'poor' (especially beggars and vagabonds).³³ In contrast, the famines provided bountiful opportunities for personal aggrandizement both for unscrupulous profiteers (hoarders, smugglers, corrupt food administrators, usurers, greedy landlords and others) and for those who, legitimately, had at their disposal resources that exceeded their needs or had some other means of wielding an economic or social lever. The famine of the 1590s, in particular, played a key role in determining the final crisis of the small peasant landholders and their transformation into labourers and wage earners (the inevitable consequence of the growing indebtedness of the inhabitants of the rural areas),³⁴ all to the advantage of big landowners. For example, in San Felice sul Panaro, while in the middle of the sixteenth century property was definitely fragmented, by the early decades of the following century a selection process in favour of the larger farms had been completed, on the one side resulting in a huge increase in landless peasants, and on the other in the concentration in just a few hands not only of the land, but also of the administrative posts of the community and of political power in general (Cattini, 1984).

The situation during the plagues was to a certain extent different. It was characterized by more generalized risk and by fewer opportunities for profit, illegal or otherwise (although it is worth recalling what has been said about smuggling, evading the road blocks). However, in this instance, too, there were those who benefited: in general all the survivors, who not only in some cases came out of the situation with increased wages, like the Venetian master craftsmen (Pullan, 1964), or profited from the mechanisms of inheritance triggered by the plague (Chauvard, 2005; Alfani, 2010c), but also benefited from better standards of living (Malanima and Capasso, 2007) and from a less crowded urban environment. More particularly, the voids created by the epidemics in local populations (mainly in urban populations in the sixteenth century) were for many people, and not only property owners or members of the social and economic elite, precious opportunities to achieve long-standing ambitions. Unfortunately, on this subject there is a lack of systematic studies on a micro-analytical scale (individuals), which

is the reason for my resorting to the example of Ivrea during the plague of 1630, even though it is outside the limits that I have chosen to adopt in this study. On the basis of an almost uninterrupted seventeenth-century series of *estimi* (property tax records) and corrections of the *estimi*, I have analysed the movements of property before, during and after the contagion to an unusually detailed degree, since I have been able to study all the patrimonies in Ivrea, year by year for most of the century (Alfani, 2009c, 2010c, 2010d). I discovered that the voids created by the plague in the urban population offered the inhabitants of the neighbouring countryside wanting to move into the city an excellent opportunity for occupying physical space (housing) and for acquiring property: between 1629 and 1632, the number of *forestieri* listed on the land register of Ivrea increased by 35 per cent, mainly poor immigrants who bought very modest property. At the same time, some citizens with financial resources took advantage of the situation to enlarge their patrimony, exploiting the opportunity of the exceptional abundance of property being sold in the real estate market, brought about both by the death of many owners and by the decision taken by members of the local elite to move to Turin.³⁵ The latter, in turn, made the most of the spaces that the plague had left in the capital using part of the assets held in Ivrea to finance investments in Turin. The last to benefit from the redistributive mechanisms brought about by the plague were the clergy, both as individuals and as members of specific institutions, which appropriated inherited legacies, endowments and *ex voto* offerings.³⁶

War still remains to be analysed. The first part of this chapter explored the capacity of the wars, like that of the political-institutional upheavals, to distribute advantages and disadvantages to states and communities. In particular it was seen that the system of military *condotte* could make the fortune of entire states, both because the prince reinvested the proceeds in his own territories, and also because the *condotte* offered an opportunity to procure work for the subjects, through recruitment in the military companies and other ancillary services.³⁷ However, the phenomenon of the 'co-optation of the elite' (Rizzo, 2005, 2012), if on the one hand it enabled the Spanish Crown to create consensus in its subject territories and to acquire the human capital that was essential for its 'grand strategy', conversely for individuals with high skills and a solid socioeconomic basis it was an excellent opportunity to advance their careers and their own and their families' social standing, similar to, but even greater than what had been possible in the full flowering of the system of medieval and Renaissance courts. The opportunities multiplied along with the growth of the bureaucratic machinery between the sixteenth and seventeenth centuries, as for example in Naples (Mantelli, 1986). It was an even more important aspect as, in the Spanish dominions, offices and wages were not the preserve of members of the principal families but were often assigned to relatively minor figures, in an effort to combine considerations of political convenience with the intent of

rewarding the more capable and loyal.³⁸ Furthermore, the opportunities offered by the Spanish Empire's need for men and for specific skills did not only value captains and professional soldiers but also administrators, secretaries, technicians and engineers,³⁹ competent craftsmen and, naturally, artists. Cases in point are the engineer Francesco Paciotti from Urbino who, having been in the service of the Pope, of the dukes of Parma and then of the dukes of Savoy, was sent by Philip II to Flanders to work on the construction of the Citadel of Antwerp (Paci, 2005: 29–30) or that of the nobleman from Cremona, Brocardo Persico, who was entrusted by the same sovereign with important diplomatic and administrative offices (from 1556, Commissary-General of the army of Lombardy and Piedmont, an important office with a handsome stipend), as well as with the occasional military commission (Rizzo, 2006: 129–32).

While Italy was able to supply skills and while Spain was able to pay for them, their relationship was essentially a happy one and, for many, extremely profitable. Among these 'many' worth mentioning are the great bankers of the Peninsula, who were, however, also the first to be affected by the incipient difficulties of the Spanish Crown to meet its financial commitments. I have already analysed their case, to a certain degree at least. In fact, this is a subject that should be examined on a wider timescale than the one adopted here.

In short, in the sixteenth century, the action of the Horsemen of the Apocalypse had redistributive effects at various levels (states, communities, individuals) that affected physical and financial capital as well as human capital. On closer inspection, a real understanding of the way in which the Horsemen operated involves acknowledging that, from an economic point of view, the 'redistribution' was as important as the 'destruction', and probably even more so. Thus, interpreting the disasters of the past merely as factors of negative production (Cipolla, 1993) seems at least extremely restrictive. That said, one might wonder if and how the motley set of redistributive phenomena just described determined a diversification in the long-term dynamics also on a regional and macro-regional scale, as a rule wider, and anyway diverse compared with the one that corresponds to the boundaries of the states that divided the Peninsula. Besides, and above all, the recognition of the fact that for some, Plague, War and Famine could provide excellent opportunities for profit and development enables us to pose in a more informed manner the key question of this book: to what extent did the Horsemen of Apocalypse affect the long-term economic (and demographic) trend of Italy? And can we imagine that their Grand Tour in the sixteenth century in some way prepared, or even simply heralded, the decline of the Peninsula in the following century? An attempt to answer these questions is now finally possible.

5

Population and the Economy: Underlying Trends

'It is, Sire, the most pitie to see this contree, as we suppose, that ever was in Christendom; in some places nother horsmet nor mans mete to be found, the goodly towns destroyed and desolate.

Betwexte Verceilles [...] and Pavye, the space of 50 miles, the moost goodly contree for corne and vynes that maye be seen, is so desolate, in all that weye we sawe oon man or woman laborers in the fylde [...]. [The] towne [of Vegeva] is all destroyed and in maner desolate. Pavye is in lyke maner, and great pitie; the chyldryn kreyeng abowt the streates for bred, and ye dying for hungre. They seye that all the hole people of that contrey and dyvers other places in Italya, as the Pope also shewyd us, with many other, with warre famine and pestilence are utterly deadde and goone; so that there is no hope many yeres that Italya shalbe any thing well restored, for wante of people.

Cited in Cipolla (1993: 242)

This is how in 1529 an English ambassador travelling to Bologna to attend Charles V's coronation as emperor, described the situation of the countryside and cities in Italy. Dating generally to the years immediately before or following the Peace of the Two Ladies (1529), which marked the end of the first phase of the Italian Wars, this and similar accounts have played a key role in a now traditionally accepted interpretation in Italian economic-social historical literature (see Cipolla, 1993: 241–3).

In the first part of this book I have proposed an analytical evaluation of the damage caused by the various calamitous events that the wars brought to the Peninsula, showing that during the sixteenth century Plague and War attacked different parts of Italy in a very uneven manner. Furthermore, although in the case of War the 'long' sixteenth century, beginning in 1494 with the expedition of Charles VIII of France, marked a deterioration in the

overall picture in comparison with the previous century, as far as Plague is concerned, the period is to be considered an exceptionally favourable one. Only Famine was able, in just one circumstance (the 1590–93 crisis), to have a general impact on Italy, for reasons, however, that had nothing to do with the war.

Evaluating the action of the Horsemen of the Apocalypse, I have often emphasized that they did also bring advantages and bestow benefits, on individuals and on entire communities. In some cases, such as the great 'military market' set up by the Spanish in the area of Milan in the second half of the century, these were able to stimulate growth and increase production. More often, however, the 'positive' effects of War, Plague and Famine were of a redistributive nature transferring wealth and advantages from one part of Italy to another, and from some specific groups and communities to others: advantages for some counterbalanced by disadvantages for others. In the previous chapter I offered an overall view of these processes, making some suggestions for a comprehensive interpretation, especially regarding the key role played by the institutions in determining a different ability to cope with the calamities, if not actually to exploit them. For all these reasons, I maintained that interpreting the catastrophic events as mere factors of negative production is not only an oversimplification, but prevents a full understanding of their medium- and long-term economic consequences. On closer examination, however, the redistribution *per se* tells us nothing about whether the 'game' was, all told, positive-sum or negative-sum. Despite the already mentioned incentives sometimes offered by the calamities (*in primis* by war), it is practically certain that the final balance of the Italian Wars, like the main catastrophes of the second half of the century, was negative. The reckoning, however, was not nearly as costly as the testimonies of the time, often reflecting narrative styles typical of the *resoconti lacrimevoli* ('tearful accounts'), would have us believe and as some historians seem to imply.

Even if an exact profit-and-loss account for each state, territory or community of Italy is for the moment impossible, to conclude satisfactorily the analysis of the consequences of the sixteenth-century Grand Tour of War, Plague and Famine, it is necessary to attempt an overall evaluation. As before, population is a vantage point, as it not only enables us to map the territorial extent of the catastrophes, but also to outline a general picture for macro-areas and other appropriately constructed aggregates. Regarding this, it should be remembered that, for the populations of the *Ancien Régime*, the phases of demographic growth–stagnation–decline (the last two obviously including also the periods of acute crisis) closely correspond to the general macroeconomic tendencies. This is confirmed by numerous studies of quantitative history, at least beginning from the classical theories of René Baehrel (1961) and Pierre Goubert (1968), and there is no lack of examples for various parts of sixteenth- and early seventeenth-century Italy, such as Emilia

(Cattini, 1983), the Marches (Sori, 2005), Tuscany (Del Panta, 1974), Sicily (Aymard, 1975) and the Kingdom of Naples (Delille, 1977). Only recently has it become customary to emphasize that the trend of the overall product does not necessarily correspond to that of the (average) individual income (Bengtsson, 2004; Clark, 2007; Malanima and Capasso, 2007; Malanima, 2009a). Among the most striking cases are the serious plagues, capable not only of reducing the overall product, but also of increasing individual possessions (Alfani, 2010c, 2010d). Nevertheless, the question of the standards of living, like the issue of the distribution of the product, serves to augment the analytic requirements of contemporary historical writing without, though, diminishing the importance of the analysis of the underlying trends of the overall gross product. If these two perspectives partly tell different stories, both are important and should be considered together – avoiding any extreme views – in order to reach a true understanding of the general economic trends. In the context of this book, the moment has come to integrate what has already been observed regarding the redistributive effects of the calamities (in the short and medium term) with a thorough analysis of the underlying trends (in the medium and long term), an analysis, incidentally, that will highlight an extremely limited capacity of the sixteenth-century crises to leave a lasting mark on the general demographic (and economic) trend.¹

Once again, but in a far more systematic way than before, I will resort to my database of demographic series to answer some crucial questions. In the first place, I will explore what the overall consequences were of the Italian Wars, and whether they were able to compromise the economic health of the Peninsula. Second, I will assess the role of the end-of-century crises and, compared to the traditional interpretation, suggest a far less ‘pessimistic’ one, an interpretation that, as will be seen in the Conclusion, sheds light on the age-old question of the so-called ‘seventeenth-century crisis’. The systematic use of demographic data means that this chapter will pay much more attention to northern Italy than to the central and southern areas of the Peninsula, with which, however, comparisons will be made whenever possible and appropriate.

Partly to simplify the presentation of the research material, and partly to be in line with the analytical-methodological path that led to the construction of the series for macro-areas, presented towards the end of this chapter, I will first of all examine some specific issues: the different dynamics that characterized the lowlands and coastal areas compared with the mountains; the cities, the rural areas and their interaction; the differences between specific agricultural regions and the pace of agrarian innovation; and the problem of ‘models’ of population, considering that the Malthusian theory, at least in its common interpretation – often used too casually – is not really sufficient to understand the demographic dynamics in sixteenth-century Italy. On these grounds it will be possible to construct a differential analysis per

region (within the boundaries of the present administrations) and, finally, an overall evaluation for northern Italy.

Lowland, mountain and coastal areas: physical environment and demographic regimes

In the second chapter, when examining the extent of the great famine of the 1590s (Figures 2.2 and 2.3), I pointed out that the communities that were entirely or partly spared, or spared sufficiently not to suffer evident demographic consequences, were mainly those in the mountains. This fact provides important evidence for interpreting demographic dynamics (and their economic consequences) in the light of the principal population theories. It is therefore worth investigating some aspects of the differing behaviour of lowland, mountain and coastal areas. Furthermore, compared with the maps used previously, the aggregate series² shown in Figure 5.1 enable us to analyse the long-term trends. In order to emphasize the influence exerted by environmental factors, the series do not include urban populations (in accordance with the definition given later), whose dynamics are influenced more by the work of local and supra-local institutions. One need only recall the way in which governments and food-provisioning authorities intervened to alleviate, primarily for those having full citizenship rights, the consequences of a crop failure.

Even at a cursory glance one can see that the curves presented in Figure 5.1 show different behaviour in different environmental contexts, something that does not cease with the famine of 1590–93, when the mountains

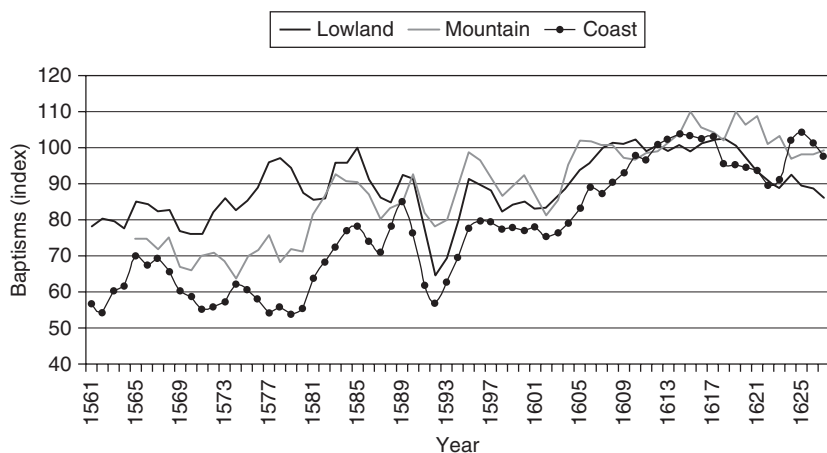


Figure 5.1 A comparison between lowland, mountain and coastal areas of northern Italy, 1561–1627 (three-yearly moving averages of the indexes of baptisms; base 100 = average 1610–14)

(in the figure mainly the Alps, see later) seem to have far fewer difficulties in comparison both with the Adriatic and Tyrrhenian coasts and with rural areas of the Po Valley. In fact, bearing in mind that the indexing of the single components of the aggregate series with base equal to the average of the five-year period of 1610–14 implies a tendency for the numbers in those years to converge, in the medium to long period we find firstly a trend of an almost steady growth in the Alpine population, with an increase in the level of baptisms of about 35 to 40 per cent between 1565 and 1605. This phenomenon is consistent with the general interpretation advanced by Jon Mathieu (2009). He emphasized how this slow but steady process of growth in the Alps inside and outside Italy, meant that the total population tripled between 1500 and 1900. On a regional and subregional level, the demographic growth in the Italian Alps in the course of the sixteenth century is confirmed by various studies (see, for example, Maggi, 2002).

Second, if we compare the behaviour of the various environmental contexts in the 1620s, years characterized by repeated episodes of dearth and famine, indicating an imbalance between population and resources that would only finally be 'resolved' by the pandemic of 1630, the mountain and the coastal areas seem to suffer less than the plains, where, however, quite different kinds of behaviour are to be found and that will be discussed later. Third, the series show that the worst plague of the sixteenth century, the Plague of San Carlo of 1575–77, has no obvious impact, a further confirmation, all in all, of its limited demographic and economic consequences, at least from the macro-analytic point of view adopted here, and of its ability to spread extensively outside urban centres. Finally, it is worth noting that on the coast the famine of the 1590s was as serious as that in the inland lowlands, indicating that even settlements by the sea depended on grain for their survival, and that fish was not able to make up for a severe cereal shortage, at least not in areas as densely populated as the Ligurian and Northern Adriatic coasts.³ From a nutritional viewpoint, fish (fresh, smoked or salted) like meat is something that provides additional calories to a diet based on bread. In the long run, therefore, like meat inland, it could not be an alternative to wheat. It can be surmised, however, that it helped to overcome periods of temporary shortages of bread (although, to this end, legumes were more important). This might explain why the coastal populations were more able to resist the insidious crisis of the 1620s.

As has already been noted, the specific characteristics of the Alpine and Prealpine areas (access to a variety of foodstuffs, for example chestnuts,⁴ which are resistant to climatic factors harmful to grain crops), explain why these areas were essentially spared the cereal crisis of the 1590s. However, environment and environmental resources are not enough to explain why the mountains, unlike the lowlands, were able to maintain in the long term a substantial balance between population and resources, without, that is, being caught in a 'Malthusian trap' like the one into which the rural areas

of the Po Valley plummeted at the end of the century, despite the fact that in the preceding years there had been attempts to react to the increasing strain on food supplies.

Such a result is in stark contrast to Braudel's interpretation of the mountain as a 'factory producing men', characterized by scarce resources and harsh living conditions and condemned to being an exporter of manpower to the lowlands and the cities (Braudel, 1979). It can only be explained by including in the analysis institutional factors as well as socioeconomic and anthropological elements. Historical anthropology, in particular, has played a key role in showing how early on in the Alps a 'low pressure demographic regime' was imposed, a regime characterized by both relatively moderate birth and mortality rates, no greater than 30 to 35 per 1000 (Viazzo, 1990, 2000). This phenomenon has been described many times in research relating to the eighteenth and nineteenth centuries (Netting, 1981; Albera et al., 1988), just as in the far rarer studies available for the Early Modern Age, which suggest that this model is applicable from the mid sixteenth century onwards (Maggi, 2002). The timing and the manner in which the transition of the Alpine populations towards low demographic pressure occurred, like the specific factors able to determine it, are not yet absolutely clear. However, many elements have been emphasized, such as the regulatory role of marriage, the forms of organization of the family, the way in which the workforce was used and so on (Fornasin and Zannini, 2002a; Lorenzetti and Merzario, 2005).

Generally speaking, the environmental characteristics of the Alps obliged the mountain dwellers to pay particular attention to the availability of resources, favouring the establishment of social customs that reduced the birth rate. The result, clearly visible from my series, was a more gradual but also a much steadier rate of growth that, along with a diet, a crop regime and a settlement pattern that differed from those of the plain, made them much less vulnerable to subsistence crises, normally caused by a failure of cereal crops that was so generalized that the provisioning authorities and the government found it difficult, if not impossible, to redress.

The Alps and Apennines

So far I have made practically no distinctions between 'mountains' and 'Alps'. It is necessary, though, to clarify that from the point of view of the demographic load, and given the conformation of the Italian territory, the Apennines were even more important. It is certainly worth exploring in greater detail the behaviour of the populations in the different mountain areas, especially considering that, although once relatively neglected, for some years now they have become a quite frequent subject of specific research from the perspective of economic history and historical demography (Romani, 1988; Fornasin and Zannini, 2002b).

My data make it possible to examine the demographic behaviour of the northern Apennines. To the west, the Ligurian Apennines, with an average altitude definitely lower than the Alps, form a broad band linking the coast of Liguria and Tuscany with the lowlands of Piedmont, Lombardy and Emilia. For this reason, even before the Roman conquest, these mountains were crossed by major communication routes and generally the mountain communities maintained close ties with areas located on the plains. Joined to the Ligurian Apennines and stretching south-east are the Emilian Apennines, which in the part around Reggio Emilia have already been studied by Marco Cattini (1988a). Here it will be possible to extend his research to include in particular the mountainous area of the territory of Parma and Piacenza, as well as that of Modena.

Partially different kinds of behaviour emerge when comparing the demographic trends of the Ligurian and Emilian Apennines with those of their respective lowlands. In Emilia, the demographic dynamics of both the mountain area and the plain showed substantially similar trends. Between 1560 and 1588, a favourable cycle made it possible to overcome the stasis brought about by the upheavals of the first half of the century and once again to reach 'full' population levels, which were considerably higher than the initial levels. The crisis of 1590–93 struck lowland and mountain areas equally harshly, although the latter seems to have been able to recover much more rapidly, but stabilized at a level of about 10 to 15 per cent lower than the level reached before the famine. It is likely that, in the most acute phase of the crisis, part of the population moved away, exploiting those temporary migration paths on which the survival of mountain dwellers had depended since time immemorial.⁵ The plain, slower to recover, had around 1615 achieved population levels that showed an increase of more than 10 per cent over that of the 1580s (as indicated by the trend of baptisms), only to stagnate in the decade prior to the pandemic of 1629–31, characterized by a heightened strain on resources that resulted in repeated episodes of food shortages.

It is possible to surmise that the divergent trends of the mountains and of the lowlands in Emilia in the decades following the famine are linked. A migratory flow from the former to the latter would have made it possible, first to repair the demographic damage caused by the crisis, and subsequently to increase further the numerical significance of the resident population. This process would have been favoured by the transformations taking place in the countryside that made it possible to support a greater demographic load (I will return to this). In those same years something similar happened in the Apennine area of the Marches, where the beginnings of a process of redistribution of the demographic loads from the mountains and high hills to the coastal areas and lower hills is seen and would continue for the whole of the seventeenth century. According to Ercole Sori, '[this] is a confirmation of the reduced economic and demographic capacity of the

foothills and Apennines, where the crisis of the 1590s reversed a long cycle of expansion and opened a phase of involution' (Sori, 2005: 10). The case of the Apennine area of the Marches, however, seems to be different from that of the Emilian Apennines, where it is not possible to claim that the mountains were affected by the famine of the 1590s more than the lowlands, and likewise, it differs from that of the Ligurian Apennines.

In the decades following the end of the Italian Wars, we find also in Liguria a population trend that is similar both in the mountain areas and the coastal plain with a tendency towards growth, even though markedly less vigorous compared with Emilia and other parts of northern Italy (see later for a comparison between regions). In Liguria, too, the turning point in establishing the ratio between the relative numbers of population is marked by the famine of 1590–93. As in Emilia, the crisis hit equally the Apennine area and the lowlands but after the crisis the recovery of the coastal area did not take place at the expense of the mountains. This is connected to the fact that in the 1590s, the Ligurian Apennines had provided refuge for the populations fleeing from the coastal areas, and had become the object of a new phase of colonization (Moreno, 1973; Moreno and De Maestri, 1975). Rather, the difference between the mountain and coastal areas is to be looked for in the different starting levels and in the outcomes. Between the 1570s and the 1610s, an increase in births of about 65 per cent is to be found along the coast, and 'only' of 20 to 25 per cent in the Apennine area. A further discriminating factor emerges in the 1620s, when the Ligurian Apennines appear to have suffered more acutely than the coast from the negative economic situation.

Overall, the northern Apennines display many of the characteristics observed for the Alps, and especially a more stable trend of births in the medium to long term compared to the plain, accompanied by a more modest rate of demographic growth. There are, however, also some important distinguishing factors highlighted in Figure 5.2.

Compared with the Apennines, in the sixteenth century, the Alps are characterized by an even smaller variability in the annual number of births and by a definitely greater ability to resist the crises. The result, in the period under consideration, is a virtually steady trend towards very gradual growth, whose final outcome was, however, considerable (an increase of around 35 to 40 per cent between 1560 and 1605). Overall, the Alps show a greater demographic equilibrium in comparison with the Apennines that, both in the 1590s and in the 1620s, felt the effects of food shortages to a similar degree as that experienced by those who lived in the lowlands of the Po Valley. How can this kind of intermediate position occupied by the Apennines be explained? Certainly environmental factors played a part, to some extent corresponding to those typical of the Alps (for example, the presence of large groves of chestnuts and the greater dependence of mountain dwellers on animal husbandry, both factors providing protection

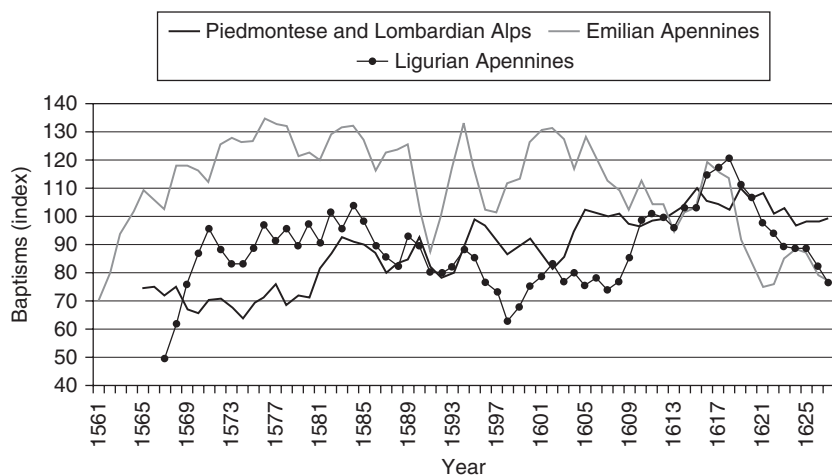


Figure 5.2 A comparison between the Alps and Apennines, 1561–1627 (three-yearly moving averages of the indexes of baptisms; base 100 = average 1610–14)

in years of grain crisis), but being less 'extreme' and at least in some measure suited to the crops with higher yields typical of the plain. While in normal years the Apennines were able to maintain a denser population than that of the Alps, in years of dearth they would be more vulnerable to the crises.

The simple consideration of the different demographic load, however, suggests refraining from a simplistic physical determinism. If the environment is essential to explain the different trends, it is also because of the way in which it affects human societies in the long term. In other words, the factors that, in the Alps, would have led to the establishment of a social, economic and institutional model able to determine a low demographic pressure, did not work elsewhere, or anyway did not have the same effects. One aspect of these different patterns of inhabiting the territory (which in many ways are still to be explored) was surely the different way in which the Alpine and Apennine populations interacted with the plain dwellers. What was observed a few decades ago regarding the mountain area of Reggio Emilia, which would be wholly part of the Emilian demographic regime (Cattini, 1988b: 82) can be generalized by stating that unlike the Alps, the northern Apennine area belongs to the demographic regime of the Po Valley, to which however it belongs with special agreements and protection. If in the north we find that the Apennine populations are able to face the crisis in a way that is neither better nor worse than the neighbouring lowlands, in the last decade of the sixteenth century in central and southern Italy there are already signs of a crisis in the mountains that would continue into the next century. The crisis was brought about in the first place by episodes of permanent migration

from the highlands to the hills, to the lowlands and to coastal areas, for example in the Marches but also in Sicily (Aymard, 1975),⁶ in Tuscany (Del Panta, 1974; Della Pina, 1982) and elsewhere.

If we consider the way in which the mountain areas interacted with the plains, we must also emphasize the force of attraction exerted by cities on rural populations. Characterized in the preindustrial age by a natural change that in the long run was almost always negative, cities managed to maintain their size, and even to grow, by taking advantage of an ongoing influx of immigrants, mainly from their own territory, including mountain areas. For this and other reasons (such as the greater exposure to epidemic risks, which I have already dealt with), the cities showed their own demographic trends. So far, therefore, I have preferred to exclude them from the analysis, but now it is opportune to pay some attention to them and point out the differences when compared with the rural areas.

The cities

According to an entrenched theory, for cities in general, the Early Modern Age was a time of crisis (Braudel, 1979). However, if applied to the specific case of sixteenth-century Italy, this judgement seems inappropriate considering the great vitality demonstrated by several important urban centres, among which a prominent place should be given to the many new capitals, which I discussed in the previous chapter. My interpretation is not inconsistent, however, with the theory of a demographic decline in cities in the following century triggered by the crisis of urban economies (Sonnino, 1982; Belfanti, 1990) and demonstrated by a mass of local studies. Neither is it inconsistent with Paolo Malanima's recent attempt to evaluate rates of urbanization in Italy over a very long period (Malanima, 2005). He maintains, in fact, that while it is true that the rates of urbanization in central-northern Italy was 21 per cent in 1500 and 'only' 18.4 per cent in 1600, the peak was reached during the first half of the sixteenth century (it was then that the gap caused by the Black Death of the fourteenth century was finally bridged in full), and the urban populations would move away from this peak mainly on account of the Plague of San Carlo in the 1570s. What is more, during the sixteenth century the urban population of the centre-north of the Peninsula, while diminishing in proportion, would however continue to increase in absolute size (by almost 30 per cent) and also the number of cities with 5000 or more inhabitants would increase considerably (from 71 to 86). On closer examination, in comparison with previous interpretations and especially that of Bairoch, Batou and Chèvre,⁷ Malanima offers a picture that while being one of proportional decline is also one of greater dynamism, interrupted only by the crises of the 1620s and 1630s.⁸ In the south, the extremely rapid growth of Naples should be mentioned: already in 1547, with its 200,000 inhabitants, it had become the largest city on

the continent (Ginatempo and Sandri, 1990) and its growth showed no signs of coming to a halt.⁹

Possibly Malanima's estimates attach too much importance to the Plague of San Carlo, whose damage was almost everywhere very rapidly repaired. This is not the place to revise further the estimates of sixteenth-century urbanization rates. It is enough to underline that all the available information suggests that, except for specific cases, the long-term demographic and economic crisis in Italian cities did not begin in the sixteenth century: a conclusion further consolidated by the aggregate series of baptisms and burials in urban contexts (see further on, Figures 5.3 and 5.4).

Before examining the data, it is necessary to clarify an important point of methodology. The term 'city' does not refer to a community defined exclusively on a criterion of size. A definition of a city must take into consideration juridical-institutional, functional and socioeconomic factors as well as questions of size, and, in fact, in Italy also due to the high level of political fragmentation and for other reasons, many places performed typically urban functions but with a moderate-sized population.¹⁰ However, for practical reasons it is necessary to have a definition that is not so complex as to be unusable, which is why the dimensional criterion prevails in literature. If the threshold of 10,000 inhabitants, suggested by de Vries (1984), seems too high and fails to reflect the situation of urban centres in the Early Modern Age (not even in Italy, where many of the European metropolises were to be found), the threshold of 5000 inhabitants adopted by Bairoch, Batou and Chèvre (1988), Malanima (2005) and others, can be considered, generally speaking, acceptable. For my purposes, though, I have chosen to reduce it further to 4000 inhabitants for reasons connected with the structure of the database; however, I have decided case by case for the smaller centres whether to classify them as cities or not on the basis of their function and of their juridical-institutional status. For example, how can we deny the status of city to Ivrea, an urban centre since Roman times (Eporedia), a bishopric since the fifth century and actually first capital of the Kingdom of Italy under Arduin I (1002–14)? Nevertheless, according to one source, in 1613, it had little more than 4400 inhabitants.¹¹

The fact remains that if one compares cities such as Ivrea with Venice, one of the principal European metropolises with 148,637 inhabitants in 1586 (Beltrami, 1954: 59), we have to agree that they were extremely different, and not only in terms of urban environment: it is sufficient to consider problems of provisioning. For this reason, rather than building a generically 'urban' series, I preferred to subdivide cities in bands of a significant size: 4000–7000 inhabitants (the small cities so numerous in northern Italy), 7001–12,000, 12,001–20,000 and finally the big cities with over 20,000 inhabitants (Figure 5.3).

Between the 1560s and the first decade of the seventeenth century, cities in northern Italy showed an overall trend towards growth, interrupted only

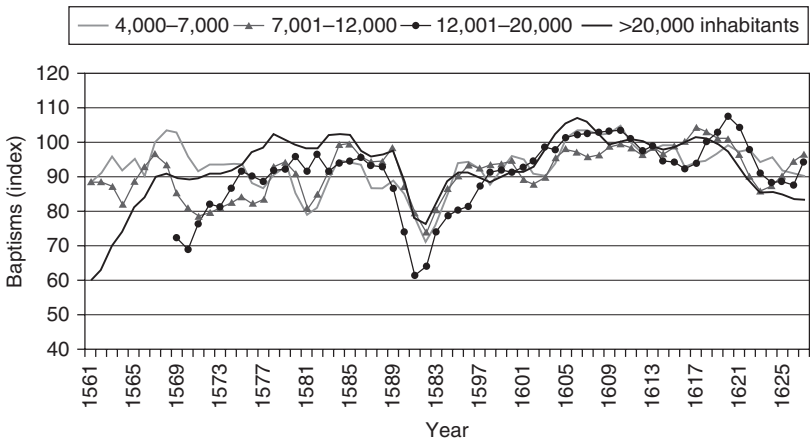


Figure 5.3 The movement of births in the cities of northern Italy, 1561–1627 (three-yearly moving averages of the indexes of baptisms; base 100 = average 1610–14)

by the famine of the 1590s, while on the aggregate level the consequences of the plague of 1575–77 are at best minimal. Moreover, as in the rural areas of the Po Valley and in the Apennines, in the 1620s there are evident signs of difficulty.

While these general trends are common to all cities (without denying the existence of specific local characteristics, linked, for example, to whether or not a city was affected by the Plague of San Carlo), the size of the urban centres clearly played a significant role. This is particularly apparent in the initial phase, immediately following the Peace of Cateau Cambrésis (1559).¹² If we bear in mind that the series are indexed with regard to 1610–14, the different initial levels (in the 1560s), proportionally lower the greater is the size of the cities under consideration, also indicate a difference in the growth potential expressed in the subsequent fifty-year period. It can be supposed that the principal cities had suffered more in the negative conjuncture that developed during the Italian Wars, not only because they were the main objectives in the military campaigns, but also because they were more difficult to supply when commerce and the movement of men and goods were impeded. Therefore, once the wars were over, the big cities found themselves depopulated, due more to migration, whether permanent or temporary, than to a mortality exceeding the norm. A potential then for growth greater than that of smaller centres went with the depopulation. In fact, in the fifty years following the peace of Cateau-Cambrésis, the cities with more than 20,000 inhabitants showed an increase in the level of births of around 60 per cent compared to the 16 per cent of the centres in the 7001–12,000 band and 13 per cent in those with 4000–7000 inhabitants. For the cities with 12,001–20,000 inhabitants, the only comparison possible

is with the early 1570s.¹³ In the subsequent forty years they grew by 29 per cent, suggesting, therefore, an extremely significant correlation between demographic size and volume of the overall growth – proportionately but even more so in absolute values.

Second, during the famine of 1590–93, the drop in births was more evident in the big cities than in the smaller ones. So, comparing the average level reached at the height of the crisis (1591–92) with that of 1585–89, the decline was equal to 29 per cent in the cities with over 20,000 inhabitants, and 39.5 per cent, 28 per cent and 24 per cent, respectively, in those in the bands 12,001–20,000, 7001–12,000 and 4000–7,000. The demographic damage caused by the famine was quickly made good, and within fifteen years, the pre-crisis levels were reached and often even exceeded.

Seen as a whole, these data do not in any way correspond to a picture of urban decline: the cities, especially the bigger ones, grew vigorously reaching a high population level at the beginning of the seventeenth century, which would only become critical in the 1620s. This is a conclusion in contrast with the most accredited estimates of the situation of the population in the main Italian cities, which suggest more modest increases or even slight decreases (Beloch, 1994). It is, however, a conclusion that is reinforced both by the greater reliability of the movement data compared with that relating to state and by the broad scope of the database used. Similarly to what has already been noted concerning the plague of the 1570s, this implies that there is room for an ‘optimistic’ revision of the estimates of the evolution of urbanization rates during the century, at least as far as northern Italy is concerned.

My series also show a more dynamic demographic trend in the big cities compared with the small ones, both in the phases of growth and of crisis. Given the rates found, the growth was mainly due to the influx of population from outside the cities: from rural areas and from the *contadi*, from the mountains, from marginal areas, and also from less important cities, first among which are to be numbered the many former capitals of sixteenth-century Italy. The metropolises, though, while able to attract large numbers of immigrants, were also quick to reject them. As detailed in Chapter 2, during the crises, when it became clear that the authorities and the food-provisioning institutions were unable to cope with the shortage of foodstuffs, the desperate crowds fleeing famine were swollen by the expulsion of the *forestieri*, a practice of which there are many examples in the 1590s. Once the crisis was over, the pace of those returning, being spread over some years, has the effect of prolonging the fall in the number of births.

Cities and rural areas

Whatever perspective is used to observe it, the demographic dynamic of the cities cannot be understood without bearing in mind the systematic

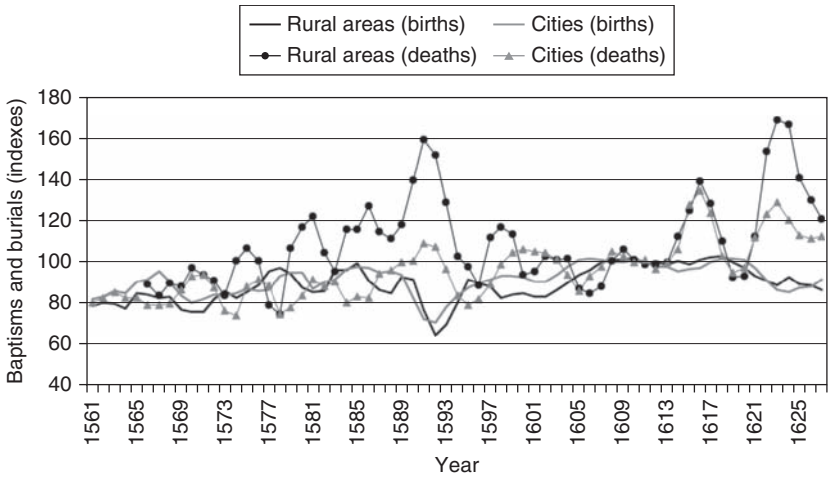


Figure 5.4 Births and deaths in urban and rural areas of northern Italy, 1561–1627 (three-yearly moving averages of the indexes of baptisms and burials; base 100 = average 1610–14)

interactions that linked urban to rural areas. It is helpful, therefore, to compare the trend of births between cities in general and rural areas. In Figure 5.4, the 'urban' series includes the cities with more than 7000 inhabitants (I have excluded the smaller centres in order to highlight more effectively the relationships with the rural areas¹⁴). It is possible at this level of aggregation to include in the analysis series of deaths (burials). It is to be noted, however, that the comparison between the movement of births and deaths should be based on trends and not on absolute values. In other words, the comparison between the series presented here does not allow us to measure the natural change (corresponding to the difference between the number of births and of deaths in a year),¹⁵ but simply suggests phases in which it was positive or negative, giving also an idea of the relative orders of magnitude.

The way in which the series behave in the acute phase of the crisis of the 1590s enables us to highlight some important aspects of the relationship between city and country. In the two-year period of 1591–92, in the rural areas of the Po Valley, births reached a more marked low point compared with that in the cities. The trend of deaths is not only a mirror image, but shows an even more marked difference between the urban and rural environment, confirming what has already been pointed out: that without the protection and the institutional support that the cities benefited from, the rural areas felt even more acutely an exceptionally serious, extensive and protracted food crisis. However, if we look in particular at the births, in the cities the depressive phase seems to begin earlier than in the rural areas and to finish later, a circumstance that could be partly explained by the cycle of

urban food supplies and partly by the rate with which those expelled or who had fled returned to the city. In fact, once the crisis was over those who had abandoned the city remained in the places where they had found shelter, slowing down the recovery of the urban populations, encouraged, however, by the increase in marriages postponed in times of dearth and by the consequent increase in births. These are questions that I have already discussed, just as I have pointed out that the flow of those leaving the city prompted by the crisis was not always equalled by the flow of those returning once it had ended, a key factor being the prospects of economic and social growth of each urban centre and, consequently, the expectations of those who had had to abandon the city.¹⁶

The relationship between the demographic trend of the cities and of the rural areas and the pace of those returning can be even more profitably studied by directly comparing the urban centres with their *contadi*, which also acted as indispensable production areas for most of the demographic surplus essential to guaranteeing the survival of cities in the *Ancien Régime*. To be brief, I will not give specific examples here, which anyway abound in historical-demographic literature.¹⁷ I will merely underline the fact that faced with the decline of an urban centre, we systematically find an increase in the demographic load of its *contado*, due to the reduction of the migratory flows from the countryside to the city. This phenomenon, little studied for the sixteenth century, is, however, well known for later periods. Also, on a macro-analytic level, the demographic decline of the cities during the seventeenth century would correspond to a considerable demographic growth in rural areas, able to more than compensate for the damage of the great pandemics of the century (Belfanti, 1984; Malanima, 2005), if not to an actual 'urbanisation of the rural areas', connected with the reorganization and regionalization of Italian economies (Corritore, 1993).

A comparison between different rural areas: agrarian innovation and Malthusian traps

During the sixteenth century the rural areas of northern Italy, like the cities, showed different demographic dynamics, while still overall respecting the trend of the long-term patterns illustrated in Figure 5.4. These differences can be traced back, on the one hand, to variations in settlement patterns and economic-agrarian models and, on the other, to lively processes of transformation and agricultural innovation that did not take the same form everywhere, nor did they have the same objectives, factors that contribute to reinforcing and complicating the fragmentation of the Po Valley territory, already examined from a political and institutional viewpoint.

Variations in agrarian systems in northern Italy are partly connected with the physical environment. The wide valley created in the course of millennia by the River Po not only varies considerably in altitude (dropping from

west to east, from almost 300 metres above sea level in the Canavese, to the lowlands of Veneto, Emilia and Romagna, in some cases even to below sea level), but is also divided into two parts by the line of the *risorgive* (natural springs). Thus, the upper plain, at the foot of the Prealps and Apennines, is characterized by gravelly and less fertile soils and deep aquifers, while the lower plain has loamy and clayey soils that are rich in water (Haussmann, 1972; Rombai, 2002; Martinis, 2003). This general distinction, which obviously describes very approximately an extremely complex geological and pedological situation, is sufficient to understand how the physical environment has been a factor influencing the countryside of the Po Valley over the long term. So, for example, it would not be possible to understand the expansion of rice crops (one of the main innovations of Italian agriculture in the Early Modern Age, at least in the area between the *risorgive* line and the left bank of the Po) without bearing in mind the gradients of the land, which require gradual flooding of the paddy fields from west to east, with all that this entails in terms of organization, institutions and even diplomacy, as well as the fact that the extremely permeable upper plain generally is unsuited to this kind of agriculture.

On the other hand, it is rice that reminds us that when dealing with human societies we should shun any physical determinism. Thus, the expansion of rice was halted in the east (where new paddy fields could easily have been established) by hostile policies adopted by the central authorities of the Republic of Venice, which, in turn, were the result of a medley of economic interests, institutional objectives, medical theories and concerns about health and public hygiene (Faccini, 1976b; Ciriaco, 1994; Di Tullio, 2009a).

Here it is impossible to analyse in greater detail the long-term influences on human activities of the physical environment, nor is it possible to develop a theory of the systemic interaction between physical and human factors aimed at explaining the existence of the wide variance in the agricultural and settlement models found in northern Italy (which will, therefore, be taken as a fact). Neither is this the place to put forward a precise mapping of the agricultural and settlement models that were widespread in the Po Valley (for these see already published material¹⁸), merely underlining that the territorial distribution of such models is closely linked to the typology of agrarian contracts prevailing in each area.¹⁹ It is necessary, however, to outline in broad terms the processes of agrarian innovation under way at the time.

Sereni (1961) and De Maddalena (1964) already pointed out that a feature of the sixteenth century was a profound change in the agrarian landscape, above all because swamps and marshes were reclaimed and the territory's water system was reorganized (rivers and streams were embanked and canals dug), but also because of important crop innovations. Some of these were related to the introduction of plants from the New World: in particular maize, a product grown for self-consumption or to feed farm

labourers working on large estates. Maize appeared in an Italian herbarium for the first time in 1532 and was regarded as a kind of garden novelty, but then rapidly found an economic use as animal fodder. It seems that it was the great famine of the 1590s that brought about maize-growing on a larger scale for human consumption (Doria, 2002: 570–1), further encouraged by the food crises and epidemics in the early seventeenth century (Coppola, 1979; Levi, 1984; Finzi, 2009). Among all the species of vegetables imported from the Americas, in Italy maize played a pre-eminent role, much more so, for example, than the potato that, although early on was extremely important in other parts of Europe, became widespread in Italy only during the nineteenth century, especially in the mountains and on marginal lands (Doria, 2002: 573–5).

Apart from specific and restricted cases, however, in general in the sixteenth century the great ‘march of maize’ was yet to come. In northern Italy another crop, which later would be systematically associated with maize, began to acquire considerable importance: rice. I have already mentioned some questions related to the expansion of rice-growing that would, however, be limited to well-defined areas, in particular in the State of Milan.²⁰ I will merely add that both rice and maize introduced an important diversification in crops, not so much from a nutritional point of view (the nutritional deficiencies of maize are well known²¹) and not only for their high calorie yield, but also because they provided a kind of insurance against those meteorological conditions that were particularly unfavourable to cereals (Finzi, 2002; Alfani, 2010a). In the mid nineteenth century, for example, an agronomist wrote ‘[Maize] has this characteristic that when the season is inauspicious for wheat it is propitious for maize’ (Terrachini, 1854: 192, our translation).

While these new crops played a key role in enabling Italy to escape the ‘Malthusian trap’ that occurred on the plain between the end of the sixteenth and the beginning of the seventeenth century, enabling further demographic growth starting from the following century (Alfani, 2010a), certainly neither rice nor maize were the major factors in bringing change to the rural areas of the Po Valley in the sixteenth century. This role is to be attributed to the increase in irrigated fodder crops related to the efforts to control water for agriculture (De Maddalena, 1964; Ciriaco, 1994). As will be seen, unlike the innovations previously mentioned, the increase in irrigated meadows, rarely included in crop rotation systems,²² would exacerbate, and not resolve, the food problems of a large part of northern Italy, and especially the territories of the State of Milan, which, also in this case, were the driving force behind the transformation (Chittolini, 1988).

So not all agrarian innovations increase food production. It has to be said, however, that already before the catastrophe of 1590–93, the peasants of northern Italy were aware of the growing imbalance between demographic load and capacity to produce food (Alfani, 2010a). In eastern Emilia, for example,

the slow move from open field to the *chiusura* (enclosed field) and then the *piantata* (planted field),²³ begun at the end of the fifteenth century and completed around 1620, meant that sacrificing food variety in favour of a simple increase in calories produced (Cattini, 1984), establishing a nutritional regime based on bread and wine that made the population of Emilia even more dependent on cereal crops. The slow and progressive transformation of estates was coupled with an increase in the population settled on the territory. These phenomena were connected in a system of reciprocal influences that cannot be fully understood from a Malthusian perspective and that, as will be seen, calls for theoretical clarification.

It would be impossible here to explain all the factors that in sixteenth-century Italy were changing crop regimes, the organization of country estates and farms, the agrarian contracts and so on. Here I will just give some examples, chosen both for the abundance of available data, and because they are particularly significant and suited to introducing the question of the logics and of the models of population. Figure 5.5 illustrates aggregate series that describe the trend in births in three specific rural areas of northern Italy: eastern Emilia (in particular the countryside round San Felice sul Panaro), the Milanese and Lodigiano areas in Lombardy and the Canavese in Piedmont. The first case is a territory involved in the slow transition from *chiusura* to *piantata*, without therefore any great innovation in the kind of crops that were cultivated, or any important animal husbandry, but, on the contrary, an increasingly marked dependence on 'traditional' crops of grain and on grape harvests (Cattini, 1978a, 1984). The Milanese and the Lodigiano areas are instead in the heart of the irrigated area of Lombardy, at that time equipped with the most advanced water-distribution network.

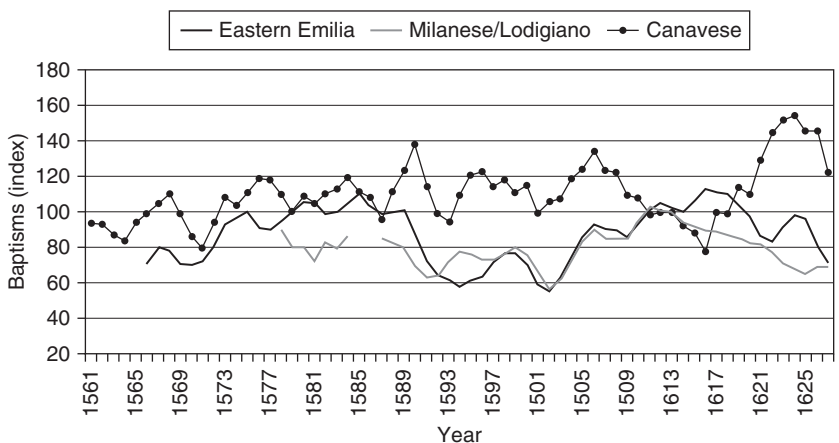


Figure 5.5 The movement of births in rural areas of northern Italy, 1561–1627 (three-yearly moving averages of the indexes of baptisms; base 100 = average 1610–14)

The area is characterized by a large number of meadows (23.7 per cent of the overall territory in the lower reaches of the Milanese area, over 35 per cent in the Lodigiano)²⁴ and, from the point of view of agrarian contracts, of hired labourers on large estates run by tenant farmers. Alongside these large estates we find the settlement model of the *cascina*, a kind of large farmhouse that first appeared during the sixteenth century (Chittolini, 1984, 1988). Lastly, the Canavese, which I take here as an example from the 'upper' Po Plain, with its relatively infertile soil and with its low yields.²⁵ We know that rice was never successfully grown there and that wheat remained predominant, at least until the spread of maize. However, other food resources typical of the Alpine and Prealpine areas (chestnuts, pulses and so on) were available in abundance. The settlement pattern of the area was characterized by a myriad of small towns and villages, where the majority of the population resided and where smallholders were very common (Alfani, 2009c, 2010d).²⁶

A comparison between the series shows, in the first place, the limited impact on the Canavese of the food crises of the 1590s and 1620s, a fact that significantly differentiates it from the other rural areas. This is probably due to a number of reasons: the serious damage suffered during the Italian Wars, which led to depopulation (see the comments on the city of Ivrea in Chapter 1); the demographic attraction of Turin that helped to prevent a demographic growth such as to cause an imbalance in the relationship between population and resources; and, finally, the proximity to mountains and hills producing foodstuffs that were less sensitive than wheat to the kind of adverse climatic conditions made increasingly frequent by the Little Ice Age.

Second, focusing on the famine of 1590–93 and the years that followed, it would seem that the demographic damage was more serious in the rural areas of Emilia than in those of Lombardy. This does not emerge so much from observing the reduction of the births in the acute phase of 1591–92, as from observing the capacity for recovery after the crisis. In the rural areas of Milan and Lodi (like in those of Pavia; Alfani, 2007b), the births returned to previous levels much more quickly than in the lowlands of Modena. An explanation can be found in the geographical position of these areas. Emilia was one of the parts of Italy most acutely affected by food shortages, which remained severe throughout 1593. It is possible to surmise that the part of the decline in births attributable to temporary migrations was greater in the countryside of Lombardy than in that of Emilia, where smallholders prevailed and where many episodes of high mortality occurred. So, in Lombardy there was an increased capacity for recovery once the labourers who had lost their jobs were called back and re-employed on the large rented farms.

The geographical position, though, fails to explain what happened in the 1620s. In the Milanese and Lodigiano areas, the crisis seems to start earlier and to be more serious than in eastern Emilia, the Canavese and the other

rural areas examined elsewhere (Alfani, 2007b). On closer examination, this situation provides the key to proposing a preliminary interpretation of the impact of crop regimes and settlement patterns on the overall trend in populating the countryside.

Among the areas compared here, the Milanese and the Lodigiano areas are undoubtedly those characterized by the most 'modern' agriculture, favoured moreover by the presence of springs and impressive works of canalization, just as the Canavese is the most 'archaic'. It is not just by chance that the birth trends in these two areas at the beginning of the seventeenth century lie at opposite extremes. One could surmise that the introduction of new crop regimes together with the expansion of irrigation and the intensification of animal husbandry using stalls improved the diet in the Milanese and Lodigiano areas and reduced the area's vulnerability to cereal crises. This hypothesis, however, seems unfounded and the data at my disposal suggests that the opposite conclusion should be drawn: in those years, the expansion of irrigation *increased* vulnerability to cereal crises.

Naturally, this statement needs further confirmation, and investigation needs to be extended to the whole of the seventeenth century. However, the data available today suggests that the way out of this 'irrigation trap' was found in many areas only with the introduction of a new crop requiring flooding, mainly intended for the market: rice,²⁷ grown alongside maize, the latter usually produced for self-consumption (Alfani, 2010a), an innovation also accompanied by an increasingly systematic use of crop rotation. Furthermore, at the beginning of the seventeenth century the livestock directly raised on farms, even those with good, well-irrigated meadows, was certainly limited²⁸ and could not provide a regular supply of alternative food, nor, and above all, of manure for fertilization²⁹ (Chittolini, 1988). Finally, we have the opinion of some contemporary observers who saw in the irrigated meadows the cause of the fragility of the Lodigiano. Here is an example:

The land, which is to be converted into meadows could easily be so much, that when it is withdrawn, by means of this transformation, from the cultivation of fodder, the remaining perhaps will not be enough for the abundance of the state. It would be better especially for the poor first to go without meat and cheese rather than bread. Before the Lodigiano had water drawn from the Muzza³⁰ there was an abundance of every type of cereal; now that most fields have been transformed into meadows because water has become easily available, if the harvest is slightly less abundant than normal the city does not have bread for the whole year. So the richer the country has become in terms of income, the scarcer the primary food resource of its inhabitants. (Ceredi, 1567: 94–5, our translation)

The fear, then, expressed according to Ceredi by Alessandro Archinto, member of the Council of Extraordinary Revenues of Milan, was that the conversion

of wheat-growing fields into irrigated meadows certainly meant an increase in income, but was also a harbinger of risks for the *abbondanza* (bountiful provisioning) of the state. These were well-grounded fears, if the Lodigiano was the proof, fears shared by many members of the central and local authorities, from eastern Piedmont to Veneto (Ventura, 1968; Ciriaco, 1994: 45–6). From an ethical-political point of view, added to concerns about the sustainability of the overall system were those about the growing wealth of landowners and tenants, considered an injustice insofar as it hurt urban and rural workers as it was linked to innovations that entailed an increase in grain prices.³¹

The chronology of the extension of irrigated meadows, which accelerated in the years straddling the sixteenth and seventeenth century, when large amounts of capital flowed into the rural areas of Lombardy and helped to transform their appearance (Bolognesi, 1984), closely matches the trend in births: the series show that the situation was more serious in the 1620s than after the famine of 1590–93, that is when Lombard agriculture had made its greatest ‘progress’.

Observing these populations, a very strange picture emerges. Pursuing the principles of the maximization of profit (something rare in the countryside of the period), they created by themselves the conditions for the crisis of their own *habitat*. Moreover, it is a picture that raises important questions of interpretation that we could not solve without bearing in mind the principal theories about the long-term interaction between population and natural resources.

Population theories put to the test: Malthus and Boserup

On several occasions I have referred to the theory first proposed by Thomas R. Malthus (1798, 1830), both in order to highlight its general usefulness and to underline some of its inadequacies, for example with regard to the nature of the famines (which depend not only on the production of food, but also on its distribution) or, at the beginning of this chapter, with regard to an ‘un-Malthusian’ behaviour of mountain populations.

If we consider the way in which Malthus envisaged the interaction between population, resources and agrarian innovation, very briefly his theory could be summed up as follows: the level of population corresponds to a given technological situation as well as to social and cultural factors. Despite the fact that imbalances periodically occur between population and resources due to their different rates of growth (geometrical for the former, arithmetical for the latter), in time the system oscillates around an equilibrium maintained through repeated episodes of super-mortality. In order to bring about lasting population growth, a substantial improvement in agricultural technology is required. However, without the support of subsequent innovations, whose introduction is to be considered exogenous to the demographic

system, in the long-term the need for new adjustments (mortality crises) is not avoided.

Since the 1960s, Malthus' theory, widely used and often abused by international economic historians, has been challenged by another theory, formulated by the Danish economist Ester Boserup (1965, 1981). Boserup included agrarian innovation and agricultural technology as endogenous variables in her population model. Thus it is the population itself, by promoting technological micro-innovations starting from known traditional practices in response to demographic pressure, which permits a slow increase in the number of people by starting a chain reaction, without the need for a periodic rebalancing of population and resources. According to this theory, therefore, demographic pressure tends continually to stimulate technical innovation. The population ceases to be a dependent variable whose maximum value is determined by technology and environmental factors (as in the Malthusian model), but instead it is the population itself that exerts an influence on technology.

Among Italian historians, Boserup's theory was greeted with far less enthusiasm than Malthus' approach (Levi, 1991; Malanima and Capasso, 2007). Elsewhere (Alfani, 2007b), I have expressed the opinion that the demographic dynamics to be found in Italy in the sixteenth century can be understood only by taking both these theories into consideration. Furthermore, efforts have been made to show that they are complementary rather than contradictory (see Lee, 1986). Here it is worth briefly looking at these views, showing how also the series just illustrated suggest a complementarity, although with a clear prevalence of Malthusian dynamics.

Once again, it is the famine of the 1590s that provides key elements for an interpretation. I have underlined that the communities that were spared were mainly in the mountains, where, in the long term, we find signs of a slow but steady demographic growth. As traditionally the mountains are considered a place where both physical and environmental resources were limited, it is clear that this demographic growth cannot easily be explained on the basis of Malthusian logic, at least in the simple version presented here.³² It was not any 'Alpine agricultural revolution', some sudden innovation in farming techniques that enabled this growth. Rather, there really seems to have been a progressive improvement in crops, a better exploitation of and an adaptation to the meagre sources available. In other words, we are looking at a Boserupian scenario.

Why were the mountains, and especially the Alps, Boserupian, while the rural areas of the lowlands were Malthusian, as demonstrated with remarkable consistency by the different approaches presented in this and in the second chapter? What did the farmers of the Po Valley get wrong? I have already pointed out that in many areas the rural population was perfectly aware of the need to produce more foodstuffs. An example is eastern Emilia, where food variety was sacrificed in favour of the bread and wine model,

a solution that would prove to be tragically inadequate when adverse climate conditions ruthlessly affected the grain harvests. On a closer look, the rate of growth played a crucial role in determining the different results obtained in the mountains and on the plain. In the Alps, a regime of low demographic pressure, the result of social conventions capable of moderating birth and mortality rates, led to a slower growth rate. The population, then, grew at a much slower rate than the geometrical one suggested by Malthus. On the plain, and particularly in the most fertile areas, the rates of growth were very rapid, as can be seen from the figures presented, so rapid in the end as to make it impossible to adjust adequately the resources available to the demographic growth through endeavours that as a rule require years and heavy labour investment, furthermore with results that are not always positive. Inevitably, in the 1590s, the populations of the lowlands fell into a classic Malthusian trap.

The slow transformation of the countryside taking place in rural areas like eastern Emilia proved inadequate to balance a rapid population growth, however much it corresponded to the demand-induced agrarian innovation that Boserup (1981) surmised would take place in times of shrinking supplies of land and resources. Famine, a typical positive Malthusian check, intervened to rebalance the situation, in line with dynamics like those postulated by Lee (1986).³³

However, innovations in crops and in agrarian technology did not always favour increased population density, according to Boserup's predictions. In the rural areas of the lower Milanese and Lodigiano, in fact, there seems to have been a deterioration in the population-resources ratio just at a time of major investments and rapid transformation of the agrarian landscape. This is essentially due to the fact that human beings do not feed on hay.

As noted earlier, without a rotation of crops, the increase in irrigated meadows was achieved at the expense of wheat that came under pressure also from the expansion of industrial crops like linen. Why at the same time in two different areas of the Po Valley (eastern Emilia and the Milanese-Lodigiano) did such different processes occur? Probably the reason is to be sought among the economic agents who took the decisions about crop innovations. In Emilia, these were the smallholders who, obviously, had a direct interest in not starving to death and, therefore, were careful above all about producing food. In Lombardy, they were the new bourgeois landowners eager to exploit their land investments to the full, in agreement with their tenants, following a logic of the maximization of rent and profit, and with the proximity of Milan in mind – the biggest outlet of meat and dairy products in the Po Valley.

Some interesting conclusions can be drawn from this. In the first place, it does not necessarily follow that the 'modernization' of agriculture, adopting the best techniques available, leads, at least in the short term, to a greater availability of food resources. Much depends on the purpose for which such

techniques were adopted (profit or subsistence). What I have defined as the 'trap' of irrigation could not be explained without keeping in mind the allure of the food markets in the big cities on the left bank of the Po (also with the prospect of markets in the centre and north of Europe). It seems that only a kind of product, at the same time market-oriented and able to increase the availability of food, that is rice, would make it possible, during the seventeenth century, to avoid this trap (Alfani, 2010b). If then innovation in response to market incentives can have unforeseen and perverse effects (a circumstance that, moreover, provides a further link between the crises of the *Ancien Régime* and those closer to contemporary experience), also the stereotype of the stubborn farmer hostile to innovation becomes confused with the image of a 'rational actor' who knows full well what is best for him and his family and sets himself a fundamental objective: survival.³⁴ If those provident farmers, who in certain areas had actively tried to forestall the catastrophe, anyway fell victim to the great famine of the end of the sixteenth century, it was not due to incompetence, ignorance or mere stupidity, but because they were left with no feasible alternatives.

Thus, ownership structure and consequently, for the great landowners and tenants, market incentives, alter or influence the mechanisms encouraging agrarian innovation arising from demographic growth. Given the wide variety of forms of possession and the rights to the use of land found in Italy in the sixteenth century (which, as will be recalled, the famine of the 1590s would considerably help to change, all to the advantage of the great landowners), we are faced with another cause of the variability of demographic behaviour on a territorial scale.

General demographic trends in northern Italy in the 'long' sixteenth century: a reconstruction

Physical environment, settlement model, crop regime and forms of land ownership are all factors that contribute to differentiating the demographic and economic paths followed in different parts of northern Italy. The transition from a series typical of restricted areas or of specific environmental and settlement contexts to an aggregate series that describes the trend of a broad and densely populated macro-region like northern Italy³⁵ requires devising a method that makes it possible to take into account the variability between different geographical areas. In addition, within each area it is necessary to take into consideration at least the different and, in certain circumstances, the diverging ways in which rural areas and cities behaved.

To solve, partly at least, the first problem, I opted for building preliminarily a number of series corresponding to the current administrative regions (any further subdivision would be difficult to achieve, especially for the areas for which data is scarce³⁶). As for the second, I resorted to a variation of the method used by Patrick Galloway (1994), author of a reconstruction

of the population of northern Italy from 1650 to 1881. Basically, Galloway built 'urban' and 'rural' series and weighted them using estimates of the rates of urbanization given by de Vries (1984), including in the urban series only communities with at least 10,000 inhabitants. I have already argued that this threshold seems to me to be completely inadequate to give a fair description of the Early Modern urban network in Italy, and even more so in Europe.³⁷ I have, therefore, chosen to take into consideration three series: one for the big cities (more than 10,000 inhabitants); one for cities between 4000 and 9999 inhabitants;³⁸ and one for rural areas.³⁹ Each regional series is the result of the weighting between these components.

For example, Figure 5.6 shows the trend of births reconstructed for Lombardy⁴⁰ as a whole, compared with the relative series for cities and the country. The figure is useful to evidence a fundamental point: as the majority of the population lived in the country, the rural series describes general trends much better than the urban series (in other words, it is a more accurate proxy for regional movement). This is a very important fact as historical-demographic research, especially that regarding the Early Modern era, continues to show a definite preference for cities, while for many rural areas there is still a relative lack of data. Figure 5.7 provides a comparison between all the regional series that I have processed.⁴¹ In both cases, the data are indexed taking as a reference the average in 1601–28.⁴²

In general, regional series show considerable agreement, a fact that confirms the reliability of the reconstruction, and suggests that there is a 'northern' or 'Po Valley' demographic regime (the trend in Liguria shows less agreement with other regions), which has a considerable impact on the underlying movements. Local variations usually depend on factors that I have already

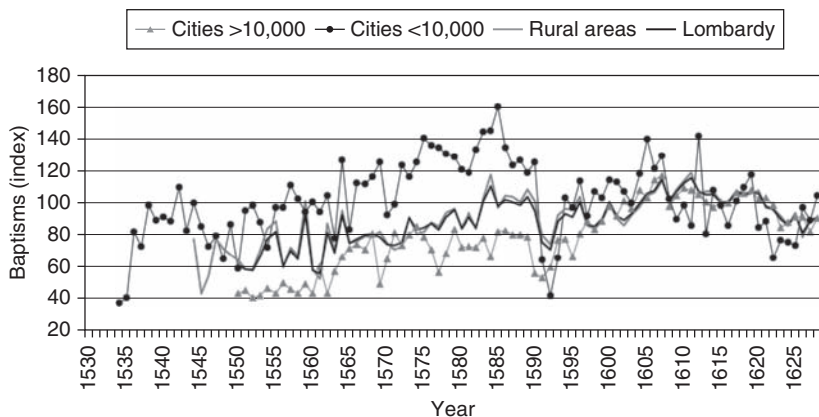


Figure 5.6 Reconstruction of the births in Lombardy, 1530–1628 (base 100 = average 1601–28)

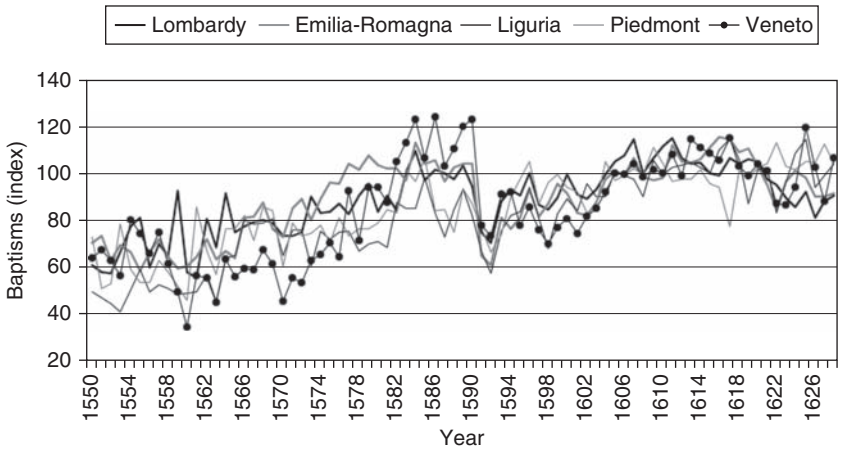


Figure 5.7 Reconstruction of the births per region, 1550–1628 (base 100 = average 1601–28)

dealt with, which is why I will not spend more time on them, except to point out once again that the famine of 1590–93 seems to be the single most important demographic event in the whole period under consideration.

To go from the regional series to those relating to the whole of northern Italy, it is necessary to identify an additional criterion for weighting. The most obvious choice seems to be to use the currently available estimates of the state of the population per region in the sixteenth century. Basically, there are two different groups of estimates of the regional population to 1550 and to 1700, the first stemming from Beloch (1994), the second from Cipolla (1965). Both are reproduced in Table 5.1, together with other data regarding the evolution of the population in northern, central and southern Italy during the Early Modern Age.

As I have shown elsewhere (Alfani, 2004b), these two groups of estimates, although markedly different as regards overall figures (4.75 million inhabitants in northern Italy in 1550 for Beloch, almost 23 per cent more than the 3.87 million estimated by Cipolla), when used as factors for weighting do not significantly affect the movement of the aggregate series. So in Figure 5.8, I only present the series weighted on the basis of Cipolla's estimates. It should be noted that it is a reconstruction of the total births in northern Italy that can be considered extremely reliable, also on account of the size of the sample. In fact, around 1600, a quota of the total population of the macro-region covering between 9 and 12 per cent corresponds to the 164 local series used.⁴³ It is definitely a sizeable sample, considerably larger than those used up to now for similar purposes and for contiguous periods (Galloway, 1994). I include with this reconstruction of births another one

Table 5.1 Estimates of the Italian population per region and macro-region, 1550–1700 (millions)

Population per macro-region												
	Northern Italy			Central Italy		Southern Italy		Islands		Italy (total)		
	Beloch	Cipolla ^a	Sonnino	Beloch	Sonnino	Beloch	Sonnino	Beloch	Sonnino	Beloch	Cipolla	Sonnino
1550	4.75	3.87	5.50	2.54	2.00	3.05	2.90	1.25	1.10	11.59	11.00	11.50
1600	5.41	N/A	6.50	2.92	2.20	3.32	3.30	1.63	1.50	13.28	12.00	13.50
1650	4.25	N/A	5.20	2.74	2.10	2.85	2.90	1.70	1.50	11.54	11.00	11.70
1700	5.66	N/A	6.70	2.77	2.10	3.30	3.30	1.64	1.50	13.37	13.00	13.60
Population per region (only northern Italy) ^b												
	Piedmont		Lombardy		Veneto		Liguria		Emilia-Romagna			
	Beloch	Cipolla	Beloch	Cipolla	Beloch	Cipolla	Beloch	Cipolla	Beloch ^c	Cipolla ^d		
1550	0.80	0.60	0.80	0.50	1.80	1.60	0.40	0.40	0.95		0.78	
1700	1.10	0.90	1.20	1.10	1.80	1.60	0.50	0.40	1.06		0.92	

Notes:

^a This estimate, 'implicit' in Cipolla, was obtained by summing up the available regional estimations with the one that I reconstructed for Emilia-Romagna^d.

^b The estimate for Piedmont includes the Aosta Valley, while the one for Veneto includes the Trentino-Alto Adige and Friuli-Venezia Giulia.

^c Beloch does not give the figure for Emilia-Romagna, which has been calculated by subtracting the regional estimates from the figure for northern Italy.

^d Cipolla gives figures neither for Emilia-Romagna nor for northern Italy. I have therefore calculated the figure for Emilia-Romagna assuming that it differs from the one proposed by Beloch in proportion to the difference found between the estimates relating to the set of the other regions. Source: Cipolla (1965), Beloch (1994) (Levi, 1991, for Beloch's regional estimates) and Sonnino (1996), supplemented by my own estimates.

based on deaths, obtained from a more limited database (88 series) due to the scarcity of information on burials prior to the *Rituale Romanum* (1614). So, reconstructing the trend of deaths I thought it best to skip the construction of regional series,⁴⁴ and consequently the final result should be considered more hypothetical. As before, the relative movement of the series, both indexed taking as a reference the average of 1601–28, cannot be used to measure the natural change.

Combining the analysis of Figure 5.8 with the previous ones, as well as with the information concerning the first part of the sixteenth century

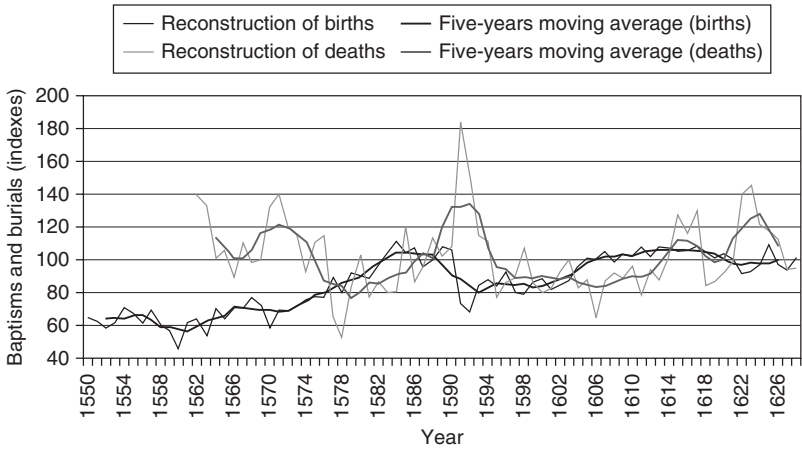


Figure 5.8 Reconstruction of births and deaths in northern Italy, 1550–1628 (base 100 = average 1601–28)

examined with a different methodology in the first three chapters, it is possible to divide 1500–1628 into the following periods:

- 1 1500–59: Demographic stasis. The stimuli to growth, while present, were curbed by a prolonged negative conjuncture due to the simultaneous presence of War, Famine and Plague. Rather than producing a reduction in the population, in the medium term the disasters merely prevented the population from exceeding the levels reached at the end of the previous century.
- 2 1560–89: A rapid demographic growth, towards 1585 already over, and followed by a very brief lull, which seems to prepare for the subsequent collapse. The fact that the series of births before 1560 shows a stationary trend implies that the growth in the following years did not depend on any cohort effect.⁴⁵ The worst plague of the century, in 1575–77, at this level of analysis is almost imperceptible, at the most determining a short-term peak of deaths, part, however, of a trend in the remission of mortality that ended only in the late 1580s. The reconstruction then confirms what has already been said about the rather limited consequences of this epidemic, restricted to north-eastern Italy, where it principally affected the cities.⁴⁶
- 3 1590–93: The extremely serious famine at the end of the century caused a disastrous and lasting decline in births, about 25 to 30 per cent. During the crisis, the gap between births and deaths widened dramatically, causing a substantial decline in the overall population, which relieved the pressure on resources. Deaths, in particular, reached an all-time high for the century, confirming the fact that it was the worst catastrophe of the sixteenth century due to its capacity to affect most of the Peninsula, involving rural areas (where the majority of the population lived) to an

even greater degree than the cities. The famine, moreover, had the effect of redistributing population between areas and communities due to temporary and permanent migration.

- 4 1594–1619: After a phase of gradual recovery, which can be said to have ended around 1605–10, the population of Italy returned to levels roughly corresponding to those before the crisis. This suggests that precise population limits were reached, closely linked to the availability of food resources.
- 5 1620–28: Fresh signs of tension between population and resources emerge. The famines and the fact that the ‘empty generations’ born in the 1590s reached their reproductive age contributed to determining a decline in births (and a parallel increase in deaths) that is a kind of prelude to the catastrophe of 1629–31.

This reconstruction is an appreciable revision of the picture of the population trends in northern Italy that has until now prevailed in the literature. This is clear not so much from examining the growth during the century, but from its distribution over time. In fact, far from indicating a slow and gradual development throughout the whole century (as implied, for example, by Pinto, 1996, and Lo Cascio and Malanima, 2005), the population, having been ‘compressed’ in the first half of the century, made a great leap forward in the thirty-year period of 1560–89, with an increase in births of 60 to 70 per cent, corresponding to an average annual increase of between 15.7 and 17.7 per 1000. The crisis that followed seems to be the inevitable result of a too rapid and too substantial growth. I have already mentioned that I think that it is a mistake to affirm that the famine of 1590–93 was the end of the growth phase that began in the second half of the fifteenth century, and a premonitory sign of a seventeenth-century demographic crisis.⁴⁷ Here I will merely underline that the levels of births of the 1580s were again reached within twenty years, remaining stable until the crisis of the 1620s.⁴⁸ From the macro-demographic viewpoint, and except for its important redistributive effects, the famine did not interrupt a cycle, a role to be attributed to the seventeenth-century calamities.

Other aspects of the current reconstructions of the demographic movement in Italy are confirmed, or are at least not in question. So, the substantial demographic growth in northern Italy in the second half of the century is compatible with the idea that damage caused by the plague of the fourteenth century was slow to be repaired (in other words, there was room for growth). According to Giuliano Pinto (1996: 61), around 1550, the population of northern Italy was still 12 per cent below the one before 1348, while the population of the south and the islands had already exceeded it by 23 per cent. It is not surprising, therefore, that some reconstructions indicate between 1550 and 1600 a more robust demographic growth in the north compared to the centre⁴⁹ or to the south (Sonnino, 1996: 79).⁵⁰

The 'fat' cohorts of births of the 1580s help to sustain the births at the beginning of the seventeenth century (at least until 1615), just as the 'lean' cohorts of the last decade of the sixteenth century further depress the demographic trend of the 1620s: the seesaw of these demographic curves is clear. Nevertheless, the baby boom of the period 1560–89 is an event that has no explanation in the weight of previous generations. It is possible to imagine that there was an increase in the birth rate, due perhaps to a temporary regression of epidemics and a cycle of good harvests, and probably also an increase in the marriage rate once the wars were over and expectations improved. It is an unusual perspective for a pre-transitional era and certainly for a relatively distant period like the sixteenth century. Further studies are required to shed light on its implications.⁵¹

1595–1620: an Indian summer or a solid recovery?

After a period of stagnation, due to the difficult situation in the first half of the century, in the 1560s there was a phase of extremely rapid demographic growth, a real baby boom, which, within thirty years, led to a population ceiling apparently impossible to exceed. The Malthusian crisis of 1590–93 only temporarily rebalanced the situation, while the creeping crisis of the 1620s seems to foreshadow a new adjustment, which duly arrived with the terrible pandemic of 1629–31.

From an economic-historical perspective, however, and aiming to propose an evaluation of the general economic trends of the sixteenth century, the most interesting fact is the stability of the demographic recovery after the famine. For over twenty years, the Italian population was at its highest ever levels – even though perhaps already equalled in the years immediately before the Black Death (Lo Cascio and Malanima, 2005). In their Grand Tour of the Peninsula, had the Horsemen of the Apocalypse prevented growth? Apparently not. The Italian Wars had, at most, the effect of delaying it and compressing it within the second half of the century. Did the famine of 1590–93, certainly the worst single calamity to strike the Peninsula in the century, interrupt a cycle of development? From a demographic point of view, the reply is again negative. Although extensive, the demographic damage caused by the crisis was soon repaired and the high levels of population were steadily re-established (although in a somewhat risky equilibrium with per capita resources seriously reduced).

Up to now, I have assumed that the underlying population trend is representative of the general macroeconomic trend, understood in terms of the overall product. I have already noted that this hypothesis is implicit in Malthusian interpretations when applied to populations mainly employed in agriculture, for whom the produce of the land is by far the predominant part of the overall product. I have also shown that the Malthusian model, with the necessary *caveat*, provides a good description of the trend of the

Italian population in the sixteenth century, and especially in the last decades of the century. So, if the level of population is linked to the economic conditions, it can be claimed that also the economic recovery of the late sixteenth century was more solid than Cipolla (1993) surmised and that the crisis of the first half of the century was less dramatic: that is, in agreement with the view of the economic trend and living conditions put forward by Braudel (1986).

The method used by Cipolla in his essay of 1965 supports this conclusion. As I demonstrate more analytically elsewhere (Alfani, 2004b), examining in detail Cipolla's revision of Beloch's estimates of population on a regional basis, one notes in the first place that the decline in the Italian population (in particular that of the centre-north) during the Italian Wars is drastically accentuated. In the case of Lombardy, for example, Cipolla's estimate for 1550 is 40 per cent lower than Beloch's. Second, a slower recovery can be seen during the second half of the century, in accordance with the interpretation of this period as a phase of dramatic expansion of trade, unable, however, to lay the foundations for enduring growth. The estimate of the total Italian population for 1600 suggested by Cipolla is therefore decidedly lower than Beloch's (almost by a tenth).⁵² If, then, it seems that he was the first to imply that there was a close relationship between economic and demographic dynamics (showing, therefore, the level on which his conclusions can be challenged), it is precisely the reference to Malthus that recalls a basic objection made by others, who claimed that Cipolla identified 'the economy' with 'urban manufacturing' (the production of textiles in particular) at a time when the bulk of the wealth produced was in harvested crops and in the raw textile materials of the countryside (Cattini, 1996–97). From a still different point of view, there are many studies, recent and less recent, which bear witness to a remarkable vitality of urban economies in Italy in the last part of the sixteenth century;⁵³ a vitality that in no way reflects the narrow-mindedness implicit in the theory of the 'restoration of the old', but rather a considerable ability to interpret the dynamics of the European markets,⁵⁴ and also a definite desire for innovation,⁵⁵ in the light of an economic and geopolitical situation that was rapidly changing. This is, obviously, without denying that 'the impressive record of the Italian economy in the second half of the sixteenth century [...] was not without its costs and its casualties. [...] The astonishing success of the Venetian cloth industry, for instance, was in part to the expense of its Florentine rival' (Sella, 1997: 21–2).⁵⁶

If the data that I propose indicates that the growth of the Italian economy in the late sixteenth century cannot be considered an Indian summer (seen as something ephemeral, 'out of season' and fated not to last), it does highlight a very difficult situation from around 1620 onwards. If we look at northern Italy, we find evidence in every region (with the partial exception of Liguria and some areas of Piedmont), in rural areas as well as in the city, in the plain as in the mountain, although here less acutely. In order to give

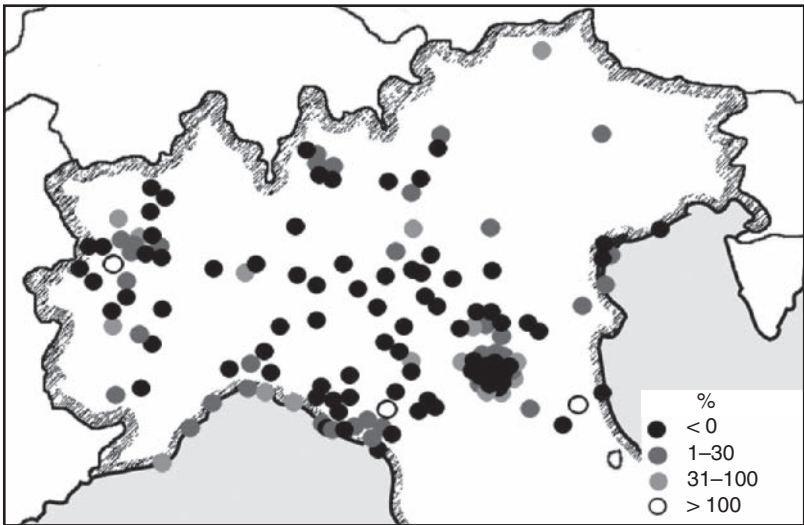


Figure 5.9 A comparison between the generations of 1604–08 and 1624–28 (percentage change)

an overall view, it is once again helpful to provide a map that illustrates the local variability of demographic trends. So, Figure 5.9 compares the average size of the generations ‘focused’ on 1606 (at the end of the recovery following the famine of 1590–93) and on 1626, in line with the methodology used for Figure 4.1, of which it is the continuation.

The comparison between the generations on a local scale highlights a difficult situation for most of the communities examined, which, even though it does not appear to be a generalized crisis comparable to that of 1590–93, nevertheless had a significant effect on the demographic dynamics of northern Italy. Whereas, comparing the generations focused on 1560 and 1587, the impression was of a substantial and widespread growth (Figure 4.1), the comparison between the generations born around 1606 and 1626 shows the interruption of the phase of expansion. Not only do the black marks prevail in Figure 5.1 (86 out of a total of 151), corresponding to communities where the size of the birth cohorts did not increase or was reduced, but in many cases a considerable decline occurred, in the order of 15 to 30 per cent and sometimes more.

The importance of the creeping crisis of the 1620s was forcefully underlined by Ruggiero Romano, for whom in that period ‘perhaps the Italian economy experienced its worst ever depression’ (Romano, 1974: 1908, our translation). If the same method of interpretation already used to evaluate the theory of the Indian summer is applied to this opinion, we cannot but observe that the demographic data suggests also in this case the need for an

appreciable revision. Although there are all the signs of a widespread crisis, it was not a general collapse: it is sufficient to make a comparison with the famine of 1590–93, which instead affected almost all the economic, social and demographic systems in Italy. Like Cipolla, Romano also probably looked to the past – the ‘long’ sixteenth century – as the prelude to the ‘seventeenth-century crisis’. The new data presented here, like the specific studies that have proliferated in the past 20 years, do not seem to validate this interpretation, on which they seem to cast considerable doubt. In my opinion, Cipolla and Romano were mistaken when they looked to the past to find warning signs of an impending crisis whose importance has been considerably redimensioned by recent historiography. They should, rather, have looked to the future, and in particular to the terrible pandemics of 1629–31 and 1656–57, tragedies without precedence since the time of the Black Death, as well as being events unparalleled elsewhere in Europe. This perspective encourages us to turn to the period subsequent to that examined so far: the ‘short’ seventeenth century, which began in 1629 and ended around 1700.

Conclusion: Towards the Seventeenth Century

The second half of the sixteenth century was the 'Indian summer' of the Italian economy. In that Indian summer, however, were sown the seeds of future difficulties. Reconstruction there was, but it was restoration of old structures, and recovery took place along traditional lines. The guild organization was strengthened, but all the guilds achieved was to prevent competition and innovation. Italy became progressively less competitive in international markets – at a moment when Italy could ill afford the luxury of becoming less competitive.

Cipolla (1993: 243)

I have chosen to open and close this book with a quotation from a famous study by Carlo M. Cipolla. In his book *Before the Industrial Revolution*, he used the apt expression 'Indian summer', which came to be widely adopted by historians and used almost automatically to characterize the period of robust growth that distinguished the Italian economy in the second half of the sixteenth century.

Other points in Cipolla's classic interpretation, also mentioned in the passage quoted above, have been questioned and rejected, or at least considerably modified by historians, in particular the idea of an increasingly inflexible guild organization that out of self-interest and shortsightedness would have clipped the wings of the Italian productive systems in a phase of increasing international competitiveness¹ (Cipolla tended to attribute a pre-eminent role to urban manufacturing). Today we recognize that the Italian guilds showed considerably more dynamism than Cipolla implied,² just as we recognize that the presumed 'decline' of the Italian economies during the seventeenth century was only partial and has to be understood in relative terms.

The theory of the Indian summer, however, has lasted until the present time, becoming a kind of cliché, perhaps because of a lack of studies in

recent years on the sixteenth century in comparison with the seventeenth, or perhaps on account of the greater difficulty in obtaining systematic quantitative data for the sixteenth century with respect to the seventeenth. Whatever the reasons, the current lack of attempts to provide, from the point of view of economic history, a comprehensive analysis of this century is evident: despite its key role in shaping the long-term dynamics of the Peninsula, a point that has already been made clear by Fernand Braudel (1979). It has been the aim of this book to take a first step in this direction, based on a specific analytical methodology that has made demographic dynamics, systematically documented for large areas, the key to understanding the economic processes triggered by those calamities that, according to a certain historical tradition, were typical of the period, as well as investigating how and when they shaped (when they did so) the underlying trends.

What does the theory of the Indian summer imply if we project it towards the past? Basically, that the economic growth that Italy experienced in the second half of the sixteenth century was at least in part stimulated by post-war reconstruction,³ or, more precisely, by the recovery of the damage caused by the passage of the Horsemen of the Apocalypse, drawn to the Peninsula by the Italian Wars. The analysis of the demographic, economic, institutional and sociocultural effects carried out in the first part of the book has, though, intimated that War and Plague did not cause excessive harm to the Peninsula. The former mainly affected Italy in the period from 1494 to 1529, and did not portend any generalized catastrophe (unlike what happened in other parts of Europe during the Thirty Years War in the first half of the seventeenth century); the latter brought to Italy relatively mild epidemics, if we bear in mind that the principal culprit of medieval and modern pandemics, the plague, in the sixteenth century was markedly weaker in intensity in comparison both with the past (fourteenth and fifteenth centuries) and, as will be seen, with the future. That leaves Famine, certainly responsible for the main catastrophe of the century in the years 1590–93. It was an event of exceptional gravity – but from which recovery was very rapid. Furthermore, all three Horsemen, while striking most harshly individuals and social groups with limited skills, involved a loss of human capital that was definitely less than proportional compared with the total loss of population.

If, in terms of damage to human capital or in collapse of the overall product,⁴ the events of the sixteenth century did not then have such serious consequences, this line of interpretation (as far as the product is concerned, similar to Cipolla's theory of 'negative production') has also proved insufficient to understand fully the economic effects of the calamities. To a keyword like 'destruction' we should in fact add another two: 'redistribution' and, more cautiously, 'stimulus'. With regard to the former, the wars, famine and plagues of the century involved the transfer of wealth, population and specific advantages from one part of the Peninsula to another; whether we

consider the states and statelets that shared the territory, specific areas or single communities. At the level of specific socioeconomic groups or of families and individuals, we also find very different effects from one case to another.⁵ Instead, as far as the notion of stimulus is concerned, while well suited to the case of wars (which involve, for example, large flows of expenditure *in loco* and can activate complex economic networks for the supply of strategic services, as well as offering individuals with various specializations extremely important opportunities), it is more difficult to apply to plagues and famines. It is worthwhile mentioning, however, the specific institutional stimulus offered by such events that led during the sixteenth century to developing public health and food-provisioning institutions that were far more efficient than those inherited from the Middle Ages.

In this overall view, it would seem that the Horsemen of the Apocalypse descended on the Peninsula with blunt weapons, or rather were delighted in their sixteenth-century Grand Tour, and like the French lords in the train of Charles VIII, they travelled the length and breadth of the country without devastating or seriously and lastingly compromising its economic potential.

If, then, the damage of the first part of the century undoubtedly required an effort of reconstruction that had a stimulating effect on the economies of the Peninsula – but also on its demographic systems (which experienced a long baby boom) – it seems misleading, at least, to interpret the robust growth following the Peace of Cateau-Cambrésis (1559) mainly in the light of this analytical category. Moreover, if there was reconstruction, it was not only reconstruction of the past, as pictured by Cipolla.

If we turn our attention from the past to the future, in other words, to the years that followed the moment when a kind of growth peak was attained, the theory of the Indian summer points to a substantially precarious situation: the inability to innovate led to building on weak foundations that would duly collapse. From the perspective adopted here instead, it is not the precariousness that should be underlined, but the durability of an exceptional level of demographic, *and therefore* economic, growth, a durability that is a symptom of soundness and not just of an inability to exceed a population level that corresponds to the highest ever reached on the Peninsula until then.

Italy, therefore, had in the early seventeenth century a healthy and very advanced economy. On the one hand, as Domenico Sella commented, ‘at the start of the seventeenth century Italy could still boast a prosperous, vibrant economy that was fully integrated in the larger international context and enjoyed a commanding and enviable position in it’ (Sella, 1997: 22). On the other hand, Cipolla himself in one of his last works had suggested that the chronology of economic decline in Italy required considerable revision: ‘In the mid-eighteenth century [Italy] was still regarded as an economically viable country [...]. It was only later, during the nineteenth century, that

our country started lagging behind the European economy when first in England and France and then in Germany the Industrial Revolution forged ahead' (Cipolla, 1994: 105, our translation). This timescale is not unlike that recently suggested by Paolo Malanima (2003a, 2006). However, for Cipolla the fact remained that 'in the dramatic period roughly between 1620 and 1680 our country saw a slump in its manufacturing, the loss of many markets and was overtaken by other countries in particular England and Holland' (Cipolla, 1994: 105, our translation).

Whether or not one shares Cipolla's views, still focused on manufacturing and on urban markets while we know that the seventeenth century was marked by an exceptional level of investments in the countryside that led in some areas, especially in the north, to establishing systems of agrarian production among the most advanced in Europe,⁶ it is nevertheless clear that a feature of the century was a relative decline in the Italian economies, at least if judged in terms of overall product.⁷ If, though, we look at the final decades of the sixteenth century and those at the beginning of the seventeenth, when do we find the first signs of crisis? Certainly in the 1620s, the period of a creeping crisis already recognized and analysed by Ruggiero Romano (1962, 1971, 1974), and confirmed by other scholars like Domenico Sella (1997). The demographic perspective adopted here leads to a recognition of its significance. After recovery from the famine at the end of the sixteenth century, and after a couple of decades of stability at population levels corresponding to the maximum carrying capacity of the Italian demographic system, signs of a dangerous strain on food resources once again in those years became apparent.

According to Romano, in the 1620s, a low point of 'maximum depression' was reached, 'a kind of creeping stagnation that involved everything: men, things, looms, mentalities, nerves. Once again Italy found itself at levels very much like those in the fourteenth century' (Romano, 1974: 1908, our translation). It was an extremely pessimistic point of view, which is in no way corroborated by the new data proposed here that instead suggest a state of crisis, certainly protracted, but not generalized, nor as deep as that claimed by Romano. Like Cipolla, he largely blamed the alleged deficiencies in the growth pattern of the second half of the sixteenth century, which was thought not to have been a 'renewal' of the Italian economy but a simple 'facelift' (Romano, 1971: 188). Therefore, in this case, too, the great sin of the Italian economic actors of the sixteenth century was their inability to innovate and to interpret the new situations and ideas that were advancing in Europe. This theory, it should be said, is in stark contrast with the spread of Italian culture in the 'Second Renaissance', so passionately described by Fernand Braudel (1986). Romano, in effect, referring to previous works of the French historian, had claimed that even though Braudel had shattered the myth of Italian decadence in the sixteenth century, he had not been able to provide proof of a genuine renewal (Romano, 1971).

As has been mentioned above, the new data collected and examined here, with additional research related to a period later than the one dealt with in this book, suggest that both Cipolla and Romano (although they have provided fundamental and sophisticated interpretations, the importance of which is attested to *in primis* by the fact that they continue to be an essential benchmark, as well as a powerful stimulus for reflection) made the same mistake: looking *into the past* for the principal reasons for the decline (whether absolute or relative) of the Italian economies during the seventeenth century. Thus, an erroneous model of reconstruction after the damage caused by the passage of the Horsemen of the Apocalypse brought about a precarious situation, and the famine of 1590–93 already heralded a new catastrophe. In my view, if we take the years at the turn of the century as an observation post, we should rather look *to the future* to discover the main culprit of the difficulties of the seventeenth century: not to the crisis of the 1620s, but to the terrible pandemics of 1629–31 and 1656–57, which together affected almost the whole of the Peninsula.

In fact, it seems to me that the years between the beginning of Charles VIII's campaign (1494) and the eve of the first seventeenth-century pandemic (1628) represent, by and large, a great movement that can be described (on a demographic and macroeconomic level) as the sequence of a stationary phase during the Italian Wars, of a phase of growth after Cateau-Cambrésis (1559) and then again a stationary phase from around 1585.⁸ The two stationary phases are on very different levels, corresponding to different degrees of development and not a mere 'filling up' of the population or the simple exploitation of a favourable market situation. I would, therefore, define the period of 1494–1628 as the 'long sixteenth century', distinct from a 'short seventeenth century', beginning with the catastrophe of 1629–31 and ending only around 1700–10, once recovery, at least on a demographic level, was fully achieved.

The long sixteenth and short seventeenth centuries were clearly separated by a fall (a 'catastrophe') in population and in product, for which the plague was mainly responsible. In northern Italy,⁹ the plague killed about a third of the population (Alfani, 2010b, 2011b). The pandemic that some years later hit the central-southern regions probably had similar effects if we take into consideration its marked ability to penetrate the territory, as shown by recent studies (Fusco, 2007). Italian economic historians have always recognized the role played by the seventeenth-century plague as a cause of economic decline (Cattini, 1994; Cipolla, 1993; Guenzi, 2002), but they have also systematically underestimated it, so much so that some recent works fail even to mention it (Fenoaltea, 1999) or suggest that its positive effects of demographic rebalancing and of economic stimulus prevailed over the negative ones (Malanima, 2002: 345), whereas, in my opinion, the plague played a key role both in absolute and in relative terms. In absolute terms, it had numerous deleterious consequences, some of which have already

been underlined by Cipolla (the rise in wages, which undermined the competitiveness of Italian economies at a time of increased international competition; Cipolla, 1993: 248–9). To these we should add the decline in internal (national) demand, crucial in an era of mercantilism, caused by depopulation and capable of damaging urban economies, as well as a considerable loss of human capital as, unlike those of the sixteenth century, the plagues of the following century reacquired, at least in part, the character of ‘universal contagion’¹⁰ typical of the Middle Ages. Still more important, however, was the way in which the plague in seventeenth-century Italy caused serious damage in relative terms, affecting the Peninsula far more severely than the emerging economies in northern Europe.

Like the previous points, I developed this reasoning analytically elsewhere (Alfani, 2010b, 2011b). One need only note that this is an aspect that up to now has not been taken up by European historians, partly still influenced by the ‘frequentist’ approach introduced by Jean-Nöel Biraben’s (1975) classic volume dedicated to the plague, whose methodology of identification of the many epidemic ‘waves’ that struck the continent has with time proved inadequate to differentiate their severity satisfactorily (Alfani, 2011b). One variable in particular played a key role in producing very different consequences in Italy and in Northern Europe: the ability of the infection to spread over the territory. In Italy, the seventeenth century pandemics no longer occurred in mainly urban contexts, like the plagues of the sixteenth century, but were able to penetrate in depth in rural areas, therefore forestalling in cities any chance of a rapid recovery, demographic or economic. In northern Europe, although key cities such as London and Amsterdam, which were becoming the new European metropolises, were repeatedly struck by the plague during the seventeenth century,¹¹ rural areas were by and large spared, continuing to provide flows of migrants, which allowed not only recovery but also a very notable population increase.¹²

So on a continental scale the plague during the seventeenth century was not a great equalizer, just as the sixteenth-century epidemics had had a different effect on territories, communities and specific groups in Italy. It was, instead, particularly unrelenting on the Peninsula at a time that Cipolla rightly described as being especially sensitive, considering the competition coming from those northern European cities that in contrast, not only with Italy, but also with other areas of the centre and south of the continent, had been damaged to a far lesser extent by epidemic factors. In this context, the repositioning of the Peninsula with respect to the geopolitical situation and the conditions of international commerce, as it limited the available options, also helped to intensify the effects of the catastrophe. In other words, my intention is not to provide any single-cause explanation, but rather to indicate the plague as the catalyst for systemic risk factors that, without it, might have manifested themselves in a far less serious and anyway different form. Many aspects of this complex scenario will be clarified by current research.

One last issue is worth mentioning in this rapid glance at the seventeenth century. From my perspective, which indicates the epidemic factor as the main cause of the decline of the Peninsula's economies, or at least most of them¹³ (a decline that in line with recent studies I believe was only relative), the blame does not fall on Italian institutions and economic actors. The health authorities of the Peninsula in the seventeenth century reached levels of absolute excellence, also fortified by the wealth of studies and treatises on the plague that characterized the sixteenth century (Cohn, 2010a). We can affirm, therefore, that to counter the progress of the infection, everything possible was done on the basis of contemporary medical knowledge and ability to intervene.¹⁴ For their part, the economic actors (merchants, bankers, early entrepreneurs and so on) cannot be accused of an inability to innovate or of a lack of understanding of international dynamics, not even of an ambition to ennoble themselves that would seemingly have led them to betray their vocations and duties. Rather, they played as wisely and as best as they could a game for which they had been dealt a bad hand of cards.

From our observation post, at the turn of the century we see – looking towards the future – far worse catastrophes than those encountered when looking at the past. Plague sharpened its claws and although War and Famine were more interested in other parts of the continent (Germany, for example, the main victim of the Thirty Years War), its action was enough to cause a systemic crisis on the Peninsula, from which it would take the whole of the 'short seventeenth century' to recover. Continuing to look at the future, we can also pass a more positive judgement on the economic rationality of the Italians, who coped with the crisis as best they could. It is a judgement that from the future reflects on the past, on that 'long sixteenth century' for many years considered, mistakenly, a slow and unavoidable prelude to decline. While for the second half of the century it is not possible to speak of spring – the fruits were already ripe – it was at least a real summer.

Appendices

Appendix 1 Chronology of the principal plagues and famines in Italy, 1470–1627

Plagues		Famines	
Years	Some of the cities affected ^a	Years	Some of the cities affected ^b
1476–79	Milan, Turin, Venice, Bologna, Florence, Rome, Naples	1472–74 1476	Modena, Parma Modena, Pavia
1485–87 1493	Milan, Venice, Rome Genoa, Rome, Naples, Palermo	1482–84 1493	Modena Modena
1499–1506 1509–14	Milan, Venice, Genoa, Bologna, Ferrara, Rome Milan, Venice	1502–05	Modena, Parma, Pavia, Florence
1522–30	Milan, Venice, Genoa, Bologna, Florence, Rome, Naples	1518–20 1527–29	Modena, Pavia Modena, Parma, Pavia, Genoa, Florence
1555–56	Venice, Padua, Udine	1533–34 1539–40 1544–45 1550–52	Modena, Parma Modena, Parma, Pavia, Genoa, Florence Parma, Pavia, Genoa Modena, Parma, Genoa, Florence
1564	Turin	1558–60 1569–72	Modena, Parma, Genoa, Venice, Florence Milan, Venice, Florence, Genoa

Continued

Plagues		Famines	
Years	Some of the cities affected ^a	Years	Some of the cities affected ^b
1575–80	Milan, Venice, Padua, Verona, Mantua, Palermo, Genoa	1586–87	(Piedmont), Florence
		1590–93	Modena, Parma, Pavia, Genoa, Venice, Florence
1598–99	Turin	1600–01	Modena
		1608	Modena
		1618–22	Modena, Pavia, Florence
1624–25	Palermo		

Notes:

^a These are some of the main cities affected by the most serious plagues during the period. The list, with some additions, is taken from Del Panta (1980: 118).

^b The list, far from being complete, is mainly based on monographs relating to specific cases: those that provide a wider chronology are Zanetti (1964) for Pavia; Basini (1970) for Modena; and Romani (1975) for Parma.

**Appendix 2 Births and deaths per region and macro-region,
1550–1628 (base 100 = average 1601–28)**

Year	Regional series (births) ^a					Northern Italy	
	Emilia-Romagna	Liguria	Lombardy	Piedmont	Veneto	Births	Deaths
1550	70.3	49.4	60.9	73.0	63.8	64.6	
1551	73.7	46.9	58.2	50.8	67.4	62.7	
1552	62.9	44.3	57.7	53.0	62.8	58.7	
1553	69.7	41.2	66.4	78.5	56.7	62.3	
1554	66.7	50.3	77.5	59.0	80.5	70.8	
1555	58.7	59.1	81.7	53.5	74.6	67.4	
1556	66.3	49.6	60.0	53.3	65.9	61.5	
1557	71.9	52.6	70.0	63.0	74.9	69.5	
1558	64.3	50.9	65.0	58.2	61.4	60.8	
1559	59.5	48.3	92.9	52.2	49.7	57.4	
1560	60.6	48.8	57.9	46.2	34.4	45.9	
1561	64.3	49.6	55.3	86.2	56.5	61.7	
1562	71.9	56.9	80.9	67.0	55.6	64.0	139.3
1563	63.7	45.7	68.4	56.9	45.1	53.7	133.1
1564	66.8	64.1	92.2	76.3	63.7	69.9	101.2
1565	64.1	65.0	74.9	76.7	56.1	64.2	105.6
1566	81.5	80.4	77.4	82.6	59.5	71.8	89.8
1567	82.0	78.6	79.6	71.3	58.8	70.0	110.8
1568	87.9	79.1	80.4	86.1	67.5	77.2	98.6
1569	76.5	80.9	78.8	84.7	61.6	72.3	99.5
1570	73.0	65.0	73.7	60.4	45.4	58.8	132.2
1571	85.6	75.9	73.5	79.2	55.3	69.5	139.3
1572	89.7	76.0	75.0	73.6	53.6	68.9	120.2
1573	80.7	60.7	90.3	74.3	63.2	71.6	114.8
1574	89.5	75.3	83.4	78.2	65.5	75.5	92.6
1575	96.5	72.1	84.2	70.3	70.5	77.5	110.6
1576	96.0	74.9	87.3	81.5	64.6	77.4	115.1
1577	104.7	75.3	83.0	73.5	93.2	89.2	65.4
1578	102.1	66.9	91.1	76.5	71.4	80.3	52.1
1579	107.8	69.8	95.8	76.6	94.5	91.9	83.4
1580	104.1	71.0	84.1	78.9	94.6	90.2	103.1
1581	102.5	68.5	91.2	85.1	88.2	88.9	76.8
1582	102.5	88.2	84.3	83.6	105.5	96.9	86.8
1583	97.3	85.6	100.9	102.0	113.4	103.8	79.5
1584	113.3	85.7	110.2	96.9	123.6	111.7	80.6
1585	104.5	98.7	97.4	107.1	106.9	104.3	120.4
1586	106.0	83.4	101.8	84.4	124.5	107.4	85.7
1587	96.8	72.8	100.5	84.9	103.7	95.7	96.3
1588	103.1	84.9	98.1	75.1	111.2	99.5	113.3
1589	104.4	93.9	103.9	94.2	120.3	108.1	102.0
1590	104.6	82.7	94.8	87.3	123.4	106.1	107.8

Continued

Year	Regional series (births) ^a					Northern Italy	
	Emilia-Romagna	Liguria	Lombardy	Piedmont	Veneto	Births	Deaths
1591	65.1	66.9	75.0	77.1	78.1	73.7	183.4
1592	61.1	57.4	70.4	66.7	73.5	67.8	152.0
1593	81.4	75.5	88.6	73.9	91.7	84.8	114.9
1594	76.6	82.7	93.4	90.6	92.3	88.0	111.1
1595	81.7	83.8	91.1	97.8	77.8	83.9	77.0
1596	93.4	94.6	100.4	105.3	85.8	93.0	86.3
1597	82.0	80.8	86.8	87.5	76.2	80.8	88.8
1598	87.7	68.1	84.9	96.6	70.2	79.4	107.3
1599	96.0	83.1	90.0	100.0	77.0	86.6	85.9
1600	91.8	89.7	100.0	94.7	80.8	88.5	80.4
1601	83.7	84.5	91.5	92.5	74.4	82.2	82.8
1602	82.7	96.1	89.3	83.3	82.0	84.7	93.1
1603	88.0	90.3	93.3	86.4	85.3	87.5	100.0
1604	97.9	90.5	100.0	105.4	92.4	96.2	82.8
1605	101.5	101.5	105.6	97.6	100.6	101.0	88.0
1606	99.5	99.4	107.9	99.7	100.1	100.8	64.9
1607	106.8	97.8	114.9	102.6	104.3	105.1	87.5
1608	98.9	90.7	100.7	100.0	98.9	98.4	92.2
1609	97.4	106.2	106.9	111.3	101.8	103.4	88.8
1610	98.4	100.2	111.9	104.7	100.6	102.1	96.2
1611	112.3	103.2	115.4	97.2	108.4	107.7	78.8
1612	105.3	103.8	107.1	98.1	99.7	101.8	94.4
1613	104.8	105.1	104.7	97.9	114.8	107.8	87.7
1614	106.5	103.0	105.2	102.0	111.5	107.2	101.4
1615	111.5	100.5	100.3	96.2	108.8	105.4	127.5
1616	115.8	110.4	99.5	94.5	106.1	105.7	115.3
1617	115.1	115.0	106.9	77.3	115.3	108.2	129.6
1618	109.7	106.7	104.6	101.3	103.4	104.7	84.6
1619	110.8	87.3	106.4	97.8	99.4	101.0	86.7
1620	103.5	102.1	105.7	102.9	104.6	103.9	92.3
1621	95.3	103.1	97.8	104.6	101.4	100.3	99.1
1622	85.0	83.3	95.4	113.3	87.3	91.4	139.9
1623	97.0	96.6	90.0	103.7	87.1	92.9	145.9
1624	101.3	109.0	86.0	102.1	94.3	97.3	122.0
1625	98.7	115.1	92.3	105.5	119.8	109.2	118.4
1626	90.7	94.5	81.3	104.8	103.0	97.0	112.1
1627	90.4	99.4	88.5	113.0	88.3	93.6	94.2
1628	92.1	104.5	91.1	104.3	107.1	101.2	94.9

Note: ^a The series for Piedmont includes the Aosta Valley and the one for Veneto the Trentino-Alto Adige and the Friuli-Venezia Giulia, compatibly with the main estimates of the size of the population per region available today (see Chapter 5 and particularly Table 5.1).

Notes

Introduction

1. In Pierre Chaunu's effective modellization, which we could also define as 'the theory of concentric circles', this new economy-world is a new 'fourth circle' that absorbs the pre-existing traditional spaces represented by the parish (the first circle), in turn included in the range of action of the city of reference (the second circle), which in its turn is included in the primitive economy-world persistent around the Mediterranean (third circle). The fourth circle is thus the first sphere of truly global human action known in history and marks the opening up of the 'closed worlds' relative to the economies-world with spatial limits that make up the third circle: as well as the Mediterranean, for example, also the Chinese Empire or the economic systems of South East Asia (Chaunu, 1981: 14–28).
2. For the specific case of the way in which Italian culture reacted to the 'American discoveries', it is sufficient to cite the classic work of Romeo (1989).
3. Charles V, to whom hundreds of monographs have been dedicated and whose psychology and behaviour have been analysed from every conceivable angle, is himself a symbol of the passage from the Middle Ages to the Modern world.
4. The year Columbus landed on the island of Hispaniola (Santo Domingo), 1492, preceded by just six years the moment when Vasco da Gama crowned the Portuguese dream of reaching India by sailing round Africa and getting round the double obstacle posed by the Ottoman Empire, then in full expansion, and the commercial monopoly pursued by the Venetians in the Levant.
5. As is well known, this theory was first formulated by Max Weber (1904–05). Unfortunately, compared with the analytic insight of the original, in many scientific circles a popular version is to be found that has lost much of its original incisiveness and is, I feel, unacceptable (for some further considerations on the subject, see Alfani and Gourdon, 2012a; Alfani, 2012b).
6. In particular, it should be remembered that clandestine marriages were prohibited by the *Tametsi* decree that required marriage banns to be published and weddings to be celebrated in church. The decree reinforced parental control of the unions, which Luther had expressly desired and which found legal expression in the new laws passed by the German states that adhered to the Reformation (Bossy, 1990; Zarri, 1996; Lombardi, 2008).
7. For a synthesis on the subject, see Musi (2003).
8. For Romano, the 'political' failure of sixteenth-century Italy was in turn the result of a kind of structural failure: 'Whatever is Italy, as a whole, in the 1580s and 1590s? It is a country that showed an extraordinary ability to adapt: above and beyond its political "misfortunes", a certain kind of economy and a certain type of society were rebuilt. I must emphasize that by "misfortunes", I do not mean anything fortuitous or accidental: I am convinced that those "misfortunes" are closely linked to the failure of a certain economic and social structure' (Romano, 1971: 187, our translation).
9. Luzzatto, for example, wrote: 'In the first thirty years of the sixteenth century, it is true, an uninterrupted series of wars were fought, which sooner or later affected all

of the regions of the Peninsula [...]. Certainly these wars seriously damaged those towns that had the misfortune to find themselves in the path of the armies, but for most of the population, who were able to continue their daily work undisturbed, the damage most seriously felt was the burden of taxation, enormously increased to meet the urgent military expenses, which were out of all proportion to the financial capacity of the little states that had to bear them' (Luzzatto, 1955: 117, our translation).

10. While Braudel in *Il secondo Rinascimento* (1986), was interested above all in the 'diffusion of culture' in Italy, it is however clear that he does not express any negative judgement on the 'economic' modalities with which this recovery was accomplished. According to Romano, Braudel attempted a kind of rehabilitation of the sixteenth century, but providing only partially convincing evidence – in particular, not being able 'to show a renewal of Italian economic life' (Romano, 1971: 187–8).
11. Cipolla does not expressly mention the fall in private demand and the increase in salaries when dealing with the difficult economic situation at the beginning of the sixteenth century. They are, however, variables that he uses to describe the consequences of the demographic crisis in the first half of the seventeenth century (Cipolla, 1993), and which we can consider are a constant feature of his way of interpreting the economic effects of demographic crises. I will come back to this question in Chapter 5 and in the Conclusion, while in Chapters 1 and 4 I will examine another analytical category applied by Cipolla to the study of catastrophes and in particular to war, that of 'negative production'.
12. Aymard gives a similar and complementary description of the sixteenth century to Braudel's: 'More than the so-called "price revolution" – which historiography of the 1950s suggested was the most significant indicator [...] and at the same time a kind of universal prime mover, capable of stimulating profits, consumption, exchanges and, basically, also production – in reality it is demographic growth that seems to play a decisive role. Italy, as a whole, went from less than 9 million inhabitants in around 1450 to more than 13 million towards 1600, which means an increase of around 50 per cent' (Aymard, 1991: 51, our translation).
13. In 1982, Alberto Guenzi was already lamenting that 'On the subject, amply developed theoretically (I am referring to Ricardo and Malthus), of the relationship between population and food resources, there is no specific research concerning the Early Modern Age' (Guenzi, 1982a: 333, our translation). About ten years later, Giovanni Levi (1991) put forward some ideas on the dynamics of population and the different implications of the perspectives of Malthus and Boserup. Despite these authoritative references to the importance of population theory for an interpretation of the economic dynamics of the past, up to now, except for some studies carried out on Malthusian lines, the situation has changed little if compared with the scenario described by Guenzi. An exception is the attempt made by Paolo Malanima to provide a wide-ranging interpretation (for example, Malanima, 2003b, 2005; Lo Cascio and Malanima, 2005; Malanima and Capasso, 2007). This book will provide several opportunities to make a comparison with his interpretation.
14. Even though Malanima (2003a, 2003b, 2006) is of the opinion that the 'real' crisis of the Italian economy was in the seventeenth century (a conclusion that he reaches examining the trends of the per capita product, which until the beginning of that century was, supposedly, in the centre and north of Italy, about on a par with that of the English and the Dutch), nevertheless he agrees with authors like Cipolla and Romano in passing a substantially negative judgement on the late sixteenth

- century: 'In Italy, where [in the second half of the sixteenth century] it is not possible to have recourse to new sources like those of Northern Europe and where an increase in agriculture [...] is possible only in some, limited, areas of the Po Valley, and not elsewhere, where the population is more concentrated, and where also in the industrial and commercial sector there are few inventions [...] the crisis is serious above all between 1570–80 and 1600 circa' (Malanima, 2002: 344, our translation).
15. The data relative to burials that can be obtained from the so-called *libri cittadini dei morti* ('city books of the dead'), even though sometimes already available from the fifteenth century (Del Panta and Rettaroli, 1994), are, however, seriously limited as they refer to specific contexts, in particular they are almost always exclusively available for major cities. The virtual absence of data concerning the burials performed in rural areas and in small to medium-sized cities prevents their being consulted in the same systematic way as is possible for the registers of baptism.
 16. Inaccessible both for historiographic reasons (only in relatively recent times has war, for example, begun to be an object of specific interest in a historical-economic perspective) and for documentary reasons, bearing in mind that I have been able to make use of a large quantity of data, in particular of a demographic nature, amassed in the last decades, but which had never been collected into an extensive and comprehensive database.
 17. A counter-trend worth mentioning was the conference on 'Economic and Biological Interactions in Pre-Industrial Europe from the 13th to the 18th Centuries', 41 Settimana Datini, Prato, 26–30 April 2009. There are also some important recently published studies on epidemics and famine. As regards these, refer to the specific bibliography used in Chapters 2 and 3.
 18. For example, the famous registers of the baptisms in Siena contain an almost uninterrupted series of registrations from 1381.
 19. Carlo Corsini (1974), already in the course of a seminar of fundamental (and foundational) importance for Italian historical demography, noted that out of a sample of 109 dioceses (of the current 208) for which the *Fonti archivistiche per lo studio dei problemi della popolazione fino al 1848* (Archival Sources for Studying Population Topics up until 1848) supply data on the subject, a good 43 (39 per cent) actually have at least one register of baptisms prior to 1547.
 20. The number and the distribution in time of those baptized does not always correspond to the newborn (for example, due to delays in the celebration of the ceremony; because the stillborn failed to be registered; or because of the absence in Catholic registers of representatives of other religious communities), but historical demography has produced many studies demonstrating that usually they refer to limited differences (Del Panta and Rettaroli, 1994).
 21. In reality, the book will describe far more complex documentary and interpretative scenarios and will take into consideration specific analytic problems, caused in particular by migratory phenomena (temporary or permanent) brought about by the catastrophes, which in various ways influence the registrations.
 22. For more details on this, see Chapter 5.

1 War

1. This will be dealt with in Chapter 2.
2. We can share Pierpaolo Viazzo's belief that the historical-demographical analysis systematically underrated the importance of the wars as a cause of mortality crises (Viazzo, 2002). See, for example, Cipolla (1993: 109).

3. About this literature, and specifically for the Early Modern period, suffice it to mention Parker (1988), Black (1991), Wilson (1995), Wood (1996), Lynn (1997), Chagniot (2001) and Parrott (2001). About how war was influenced by and influenced culture, Lynn (2003) and Black (2012).
4. If anything, these territories had to contribute financially to undertakings that involved the state to which they now belonged and which, as they concerned distant regions, probably would not have affected them had they still been autonomous. See, for example, Giovanni Vigo (1994) for an analysis of the situation of the Duchy of Milan in the wider context of Spanish dominions.
5. During the fifteenth century, under the long rule of Ferdinando I (King of Naples from 1458 to 1494), the House of Aragon had attempted to strengthen its rule over the powerful barons of southern Italy and to modernize the kingdom's institutions. This project seemed to bring good results and Naples enjoyed a long period of peace and prosperity, but also won the Aragonese little support from the local nobility – a support that Ferdinando's successor, Alfonso II, sorely missed at the time of the Charles VIII's campaign.
6. For a more detailed account of these events, like those of 1535–59, see Bois (2003), Fournel and Zancarini (2003), and above all Fueter (1932), Pieri (1952) and Pellegrini (2009).
7. Already in 1498, when he was crowned King of France, Louis XII had declared himself Duke of Milan, as he was a grandson of Valentina Visconti, spouse of Louis of Orleans (the House of Angoulême, of which Louis XII's successor, Francis I, was scion, also descends from this couple, which meant that Francis I could claim analogous rights over Milan). Louis XII was a descendant of the first Duke of Milan, Gian Galeazzo Visconti, unlike Ludovico il Moro, who came to power in 1480 but officially only in 1494 on the death of his nephew, Duke Gian Galeazzo Sforza, whom he was suspected of having poisoned.
8. So-called because signed for France, by Luisa of Savoy, mother of Francis I, and for Spain, by Margherita of Austria, aunt to Charles V. The treaty is also known as the 'Peace of Cambrai'.
9. The most famous of these clashes was the battle of Ceresole in 1544, a great French victory 'without consequences, as its causes were confined' (Fueter, 1932: 471, our translation).
10. Few battles have been the object of such diverse interpretations as that of Fornovo. A great Italian victory or a French success? Even the number of deaths reported by chroniclers of the period is extremely variable. According to Ceccodea, 6000 men-at-arms perished, the same number of light cavalry and 3000 infantrymen (cit. in Bertelli, 1994: 208); in this case the estimates are almost certainly exaggerated.
11. According to Del Negro (2001: 29), there were supposedly 21,000 French against 16,000 men of the Holy League.
12. Marshal Florange, who took part in the battle, gives different figures: about 23,000 French against 32,000 Imperial soldiers (Florange, 1731, vol. 2: 242–3). Different again were the estimates given by Pieri (1952: 558): 31,000 French against 30,000 Imperial soldiers.
13. Between the rout of Agnadello in 1509 and the Peace of Cambrai in 1529, Venice was almost uninterruptedly engaged in a largely successful attempt to regain its mainland territory (the so-called *Terraferma*). At the end of the period, its forces on land amounted altogether to about 30,000 men and the armies arrayed on the battlefield by the Republic in times of most need numbered 15,000 to 17,000 men (Mallett and Hale, 1984). If these numbers are evidence of the Venetians' continuing

capacity to face European powers, they also explain why, after 1529, the Republic was mainly on the defensive on the mainland, particularly considering the growing difficulties that the Ottoman Empire was causing to its possessions in the Mediterranean. Venice, in fact, was at war with the Turks in 1537–40 and in 1570–73. At the end of this latter conflict, its army was close on 36,000 men. Neither this effort nor the great victory of Lepanto (1571), won in alliance with Spain and the Papacy, would enable Venice to avoid the loss of Cyprus, which would be followed in the next century at the end of a long and particularly ferocious war (1645–69) by the loss of Crete.

14. The situation was even more critical for those small Italian states that had to struggle to protect their own territories. A case in point is the Este family, who to finance the recovery of the part of their duchy appropriated by Pope Julius II in 1510, had to pawn the family jewels and sell off or mortgage possessions and farms (Cattini, 1988a). See Chapter 4.
15. See Chapter 3 for the relief of those who noted that following a plague cities were no longer as clogged up by the poor, unpleasant and 'useless' people that had previously thronged them.
16. During the fifteenth century, there is 'a tendency to form a permanent nucleus of some thousands of men – above all in Venice and Milan – that involves the setting up of a stable administrative system and that moreover means a continual outlay on the part of state treasuries [...] in an Italian situation that seems to anticipate the general European tendency [...]. In the fifteenth century, the difference between the effectives in peacetime and those conscripted for the war approaches a ratio of three to one' (Pezzolo, 1988: 21, our translation), a ratio that Venice exceeded during the Italian Wars when the 8000 effectives 'of peace' in 1485 became the 29,000 'of war' in 1509 or the 30,000 in 1529. In Florence, in the fifteenth century, the ratio between the effectives of war and of peace stood at ten to one (ibid.: 21 and 23). See on this subject Parker (1981: 68–70), Corvisier (2000), Mallett and Hale (1984), Hale (1985) and Paci (2005: 40–50).
17. See, for example, Rizzo's (2012) comments on the price paid in terms of death, mutilation and suffering by members of prominent families of Lombardy serving in the Spanish army between the sixteenth and seventeenth centuries. However, such personal suffering became a means of claiming compensation in the form of army commissions or posts in civil administration for other members of the families.
18. 'Monsieur de La Palice est mort, / il est mort devant Pavie: / un quart d'heure avant sa mort / il étoit encore en vie.' ('Monsieur de La Palice is dead, / he died at Pavia: / a quarter of an hour before his death / he was still alive.') This self-evident verse, probably composed by a soldier in the days immediately following the Battle of Pavia, is why the Marshal of France is still famous today, and in Italian a word, *lapalissiano*, is still used with the meaning of 'utterly obvious'. On this episode, and for later writings on La Palice, see Zanetti (1993: 94).
19. Contemporary economic theory defines 'human capital' as the sum of specific and general skills and competence with which a certain individual or a group of people is endowed (for example, employees in a firm). The accumulation of human capital is considered a factor for economic development, and the different availability of human capital has often been used as a variable to explain greater or lesser success at an individual level (for example, in terms of salary), at levels of business enterprises, of states and so on. In this book, I will refer to this concept to examine an aspect of the mortality crises that, in my opinion, has

yet to be analysed with sufficient attention. The loss of skills and competence suffered by a population, victim of a catastrophe, does not depend only on the number of deaths, but also on the structure of mortality, according to age, sex, rank and so on. As I plan to demonstrate, the analysis of the structure of mortality is relevant in order to evaluate the economic consequences not only of wars, but also of famines and plagues. Besides, the concept of human capital enables us to understand the real importance of the migrations of skilled members of the population, which are one of the fundamental redistributive effects (economic and demographic) of calamities. It is perhaps not irrelevant to note that the application of the concept of human capital to the historical analysis of preindustrial societies is not without problems and epistemological snares, not only because it is the product of a profoundly different sociocultural environment, but also because, paradoxically, such a concept does not seem unlike certain medieval and Early Modern 'demographic' thought; this can be seen from the discussion that follows on the distinction adopted in times of crisis between the 'useful' and the 'useless'. These are questions worthy of careful reflection and specific analysis, which, however, still needs to be carried out. On the definition of human capital, see Gary S. Becker's classic work (1964).

20. He was Gian Giacomo Medeghino, Marquis of Marignano, captain of the Imperial army and brother of Pope Pius IV (see Rizzo, 2012, for more information about him).
21. Monluc perhaps had in mind the 'noble' example of Philip Augustus at the siege of Château-Gaillard in 1203, when over 400 'useless mouths' were trapped between the besieged and the besiegers and starved to death. For this and other examples from the Middle Ages, see Settia (2002: 117–19). However, it seems to me that the expulsion of the useless became systematic only at the beginning of the Early Modern Age, something that should be seen in the light of the change in how the poor, the disabled and 'the mad' were perceived.
22. In 1655, when Pavia was once more besieged by an anti-Spanish coalition that included France and the Duchies of Savoy and Modena, the municipal authorities decreed the expulsion of 'all the useless people', under pain of death for those who infringed the law. These useless people included, it seems, about 6,000 people from the countryside who had taken refuge in the city, considered on this occasion 'foreigners'. Unlike what had happened in previous sieges, it seems that in this case the decrees of expulsion were not effective. Moreover, Pavia had been able to get in abundant supplies before the beginning of the siege, which lasted just 53 days and ended with the withdrawal of the aggressors (Rizzo, 2000a).
23. 'When the harvest is not sufficient / all people useless to do things / suggest expelling outside the walls / women, children, the old, the blind, the mad' (Cornazzano, 1476, cit. in Settia, 2002: 117, our translation).
24. In late medieval and Early Modern Italian cities, the word *forestieri* (literally, 'foreigners') usually identified all of those who did not benefit from the rights of citizenship. These included migrants who had been living in the city for many years. Intermediary situations existed, in particular that of *abitanti* (inhabitants) who, as they owned property in the city and regularly paid taxes, enjoyed many of the citizens' rights – but not, for example, eligibility to public offices – and can then be considered as 'quasi-citizens' (see below). About the social implications of these juridical distinctions, see, for example, Alfani (2012a).
25. 'A kind of profession of beggars exists. They are persons who do nothing but beg, eat and live off the charity of the faithful. The life of these people is often risky

and morally doubtful, as often they dress as tramps to seem poorer than they really are, and so doing they swindle their fellow men to scrounge the better. Often then, even though they do not need it, they ask for themselves what others by right obtain, and collect more than they need, and, what is more, envy those who have obtained more. [...] Often they are also robust, but because they are lazy they do not wish to work and thus take alms that should have been given only to those who are truly poor. Each of these acts of behaviour of theirs is a mortal sin' (Thomas of Chobham, 1215, cit. in Todeschini, 2007: 218, our translation).

26. Soon after the siege, a census recorded the presence of just 10,271 inhabitants in Siena. Other sources indicate that about 10,000 inhabitants perished due to the war, hunger and illness during the siege, to which 400 citizens are to be added who, after the surrender, abandoned the city with all their family (Beloch, 1994: 282–3).
27. 'Monti di Pietà' ('Mounts of Piety') were charities promoted by the Catholic Church. Their aim was to offer loans at moderate interest rates to those in a condition of need, providing them with an alternative to resorting to moneylenders or usurers.
28. Regarding the different kinds of the poor, see Gutton (1977), Pullan (1978), Giusberti (1984), Woolf (1988) and Zamagni (2000). On the question of poverty, see Chapter 2, but mainly Chapter 3.
29. In Bologna, the student community, 'with its privileges and its protection', was often 'ready to provide cover for the foreigner who took refuge there, bringing him back to the centre of the social space and saving him from that marginal and peripheral area that was so dangerous for those who found themselves there. If the dark corners, the farthest parts of the square, housed those whom society rejected, the academic structure remained in the centre, and welcomed and saved the disobedient stranger as long as he maintained even a minimum contact with it' (Niccoli, 2007: 194, our translation).
30. For example, the already mentioned Fivizzano, sacked and its population massacred by the French in 1494. As will be remembered, Charles VIII had introduced the practice of destroying and sacking castles that failed to surrender voluntarily. As Priuli recorded in his *Diarii*: 'Following his path, Charles de Valois, King of France, on his way to Florence plundered and sacked with great cruelty those lands and castles that did not intend to surrender,' among them Castiglione del Terziere in the Val di Magra. 'They set light to the place and burnt many men and women and used great cruelty, so that other castles would surrender to them out of fear, and the Florentines would reach an agreement with the king,' and again later '[the king] conquered some small fortified places that he could not obtain by surrender, and all these he burnt to the ground and killed all the men, and in conquering them he used very great cruelty' (cit. in Bertelli, 1994: 207, our translation). This ferocity played no small part in alienating the sympathies of the Italian populations, who initially had welcomed him as a liberator, also on the basis of prophecies like that of the Tiburtine Sibyl, which foresaw the return of Charlemagne, or of the Florentine preacher Savonarola, who called for a 'new Cyrus', who would free the Peninsula from the subjugation of a Church that practised simony (Bertelli, 1994: 191–5).
31. The park near Pavia where the French had been taken by surprise by the Imperial forces in 1525.
32. For example, Pavia which in 1528 was actually sacked three times, went from about 16,000 inhabitants in 1500 to less than 7000 in 1529 (Aleati and Cipolla, 1950).

33. 'The Cardinal of Siena [...] even though he had reached an agreement with the Spanish for himself and his palace, was taken prisoner by the Germans. He was ransomed for 5000 ducats after his palace had been sacked and he had been led across the city bare-headed and repeatedly beaten' (Guicciardini, 1561: 1768–9, our translation).
34. For the history of Ivrea during the Early Modern era, see Carandini (1927), Benvenuti (1976), Perinetti (1989), Robesti (1977) and Alfani (2009a, 2010d).
35. Ivrea was among the few areas that, at least for a certain period, remained under the control of Carlo III of Savoy, together with other lands on the left bank of the River Dora Baltea (which included Biella, Vercelli and the Aosta Valley) and the port of Nice (Merlin, 1994: 26–31).
36. Florence also after the siege of 1529–30, experienced a lasting crisis in the textile sector, caused, though, more by difficulties in obtaining supplies of raw materials and in selling the finished product in wartime than by material destruction (Ammannati, 2008).
37. The river, which at that moment had little water, had temporarily stopped being an effective defence.
38. A census of 1613 lists few more than 4400 inhabitants, while a source of 1619 mentions 4467 (Municipal Historical Archive of Ivrea, *Categoria* 14 (*Censimento*), no. 1750 for 1613 and *Categoria* 55 (*Macina*), fas. 2, no. 2938 for 1619).
39. As John H. Hale observed, 'It is uncomfortable to draw attention to the speed with which war zones recovered; it appears to belittle the misery caused by hostilities' (Hale, 1985: 210–11).
40. This is how in 1554 Boyvin described Biella, which had surrendered to Brissac's troops after Ivrea was taken: 'Biella [...] is a long wall that encloses two or three villages or hamlets full of craftsmen and people involved in all kinds of trades [...]. When he entered, captain Pous, who had in his hands goods of great value within and outside the city, arranged a *composizione* [settlement] between himself and them [the inhabitants of Biella] amounting to 8000 scudi' (Boyvin, 1606: 150, our translation).
41. Municipal Historical Archive of Ivrea, *Categoria* 16 (*Censimento*), no. 1760.
42. On the importance and delicate subject of the relationship between military garrisons and civilians, see Rizzo (2001) for the communities of Lombardy and D'Amico (1994) for Milan.
43. Diocesan Archive of Ivrea, Register of Baptisms of the parish of San Ulderico, 1525–85.
44. On this subject, see also Rizzo's case study (2008) on the Spanish quarters in the Marquisate of Finale.
45. The civilians, however, seem to have relied on the fact that the presence of foreigners would be temporary as they showed no interest in making matrimonial alliances or becoming close friends with the occupiers. There is no trace in the surviving documents of baptisms of 'mixed couples'.
46. For more, in general, on the problems posed by recruitment and on its economic implications, see Corvisier (2000).
47. '20 October 1526. The desperation of the people forces us to denounce the ravages and even more the very wicked behaviour of the company led by Ser Sforzino in Potremolo, both when they arrived and when they departed, a company that has pillaged our land more than the Turks or mortal enemies would have done (while in truth they are allies): raped women, boys, stole and brought away things and animals great and small, of any kind, murdered people in the

street, and all other that could be described or imagined, and still now, living on our land, they continue to aspire to do evil, not recognizing a superior authority' (cit. in Romani, 1975: 221–2, our translation). For more examples, relating to the countryside round Milan, see Chabod (1961: 269–75). The recurring assertions, according to which allied troops could be for the population in their hands worse than enemies, is a literary *topos*, not without some truth, if for no other reason than that their stay in the area could be prolonged. Examples are the abuses committed, even in peacetime by the militias of the Papal State, often coniving, if not allies, with bandits and brigands (Polverini Fosi, 1985: 167–74) or the Spanish troops billeted in Lombardy, whose captains 'sometimes [organized] a real system of extortion to the detriment of the populations who provided hospitality [...]. Popular resentment obviously tended to get worse when [...] from blackmail, to a certain extent dissimulated, the soldiers passed to open physical violence [...] virtually kidnapping the whole community to make it provide the assistance required, arresting representatives of the land, molesting and raping women, and even wounding and killing' (Rizzo, 2001: 80–1, our translation).

48. At Fornovo in 1495, the 'stradioti' (the Venetian light cavalry) preferred to plunder the French baggage trains rather than to harass the enemy, thus enabling Charles VIII to run the blockade of the League and take refuge in France (Commynes, 1552, vol. 8: 11).
49. The sum negotiated in 1505 was 50,000 ducats annually for ten years. At least four yearly payments for a total of 200,000 ducats were actually paid. To these sums can be added 300,000 scudi paid by Charles V to Francis I between 1518 and 1520 on the basis of the Treaty of Noyon of 1516. In both cases the intermediaries were Italian bankers (Hamon, 1994: 58–9, and 1998: 27–8).
50. In 1510, the pay of the armies and the garrisons corresponded to 59 per cent of the total expenditure allotted by the French for the Duchy of Milan (Hamon, 1998: 32). For the pay of Italian soldiers in the sixteenth century, see also Mallett and Hale (1984: 465–7), Hale (1985: 109–12) and Paci (2005: 51–62).
51. Geoffrey Parker has calculated that an army of 30,000 men in just one day consumed the impressive amount of 20 tons of bread and the meat of 1500 sheep (Parker, 1988: 75–6). Obviously an army of such a size or bigger could not depend for any length of time on mere looting to ensure a constant flow of supplies.
52. These sums are the equivalent of about 4.7 and 1.9 million ducats, respectively.
53. In sixteenth-century tax systems, a surplus of public revenues over expenditure is rare and episodic (how else can the growing indebtedness of local and central administrations be explained?) and each tax increase had to be negotiated and justified. War, then, was usually financed by special taxation (Aymard, 2000). See, for example, for Savoy Piedmont, Stumpo (1979, 1986, 1988); for the Venetian Republic, Mallett and Hale (1984) and Pezzolo (1988, 2006); for the Papal State, Caravale (1974); for the Kingdom of Naples, Coniglio (1955), Bulgarelli (1993) and Fenicia (2003); and for an overall synthesis, Capra (1999) and Pezzolo (2012). Having said this, during the sixteenth century, some important European states tried in peacetime, through the ordinary taxes, to accumulate resources to employ in wartime (France from 1532 and England and the Venetian Republic from the end of the 1580s), resources that, however, regularly proved insufficient (Mallett and Hale, 1984: 490). At the same time, and given the frequency of military undertakings, instruments for extraordinary taxation showed in actual fact a tendency to become ordinary or almost so (Stumpo, 1979; Tilly, 1984).

54. The death without heirs of Francesco Sforza II reopened the question of the succession of the duchy; in the battle that followed, Charles V emerged as the winner and he installed his son Philip.
55. An 'era of uncertainty', which began in 1494 and ended not in 1503, but rather in 1519 with the election of Charles V, would be followed by three phases: (1) the period when Naples was a crucial base for Charles V's anti-French and anti-Turkish policy (1520–34), which essentially concluded with the inclusion of Milan in the Spanish possessions in 1535; (2) the final phase of the war until Cateau-Cambrésis (1535–59), when the fact that Milan was pivotal for the defence of all the Spanish possessions in Italy was apparent in the systematic supply by Naples of important military and financial assistance; and (3) finally, 'with the 1560s a long third phase begins in which the kingdom gradually acquires the function of a great financial centre, part of the great European circuits' (Muto, 1980: 25, our translation).
56. According to reports for the years 1550–60, the inhabitants of the Neapolitan Kingdom who were captured and taken into slavery by the Turks amounted to several tens of thousands. For example, in 1558 alone, a fleet of 120 Ottoman galleys seemingly captured 12,000 people in the areas of Reggio Calabria, Massalubrese and Sorrento. However, at the beginning of the next century, 22,000 slaves, mainly Muslim, were present in Naples (Fenicia, 2003: 12–13). The capture and restitution of slaves nurtured a flourishing 'economy of ransoms' that, through violence, integrated the various shores of the Mediterranean.
57. Paolo Giovio, a chronicler of the Italian Wars, defined Milan as: 'the liveliest and most prolific mine of gold and silver, without expense, without clamour and without fear that Saint Ambrose would be unfaithful' (cit. in Rizzo, 2000b: 160, our translation).
58. The situation in rural areas is more complicated. The large number of military personnel in Spanish Lombardy meant that rural communities had to provide lodgings for sizeable numbers of troops. Although the costs of billets was, in theory, debited to the Regia Camera (the 'Royal Chamber'), the resources for this purpose were used to plug the regular gaps in public finance with the result that 'in reality the troops were almost always kept *in loco* at the expense of the local community, who at most – depending on the *de jure* and *de facto* conditions – could hope for some form of partial reimbursement or tax rebate' (Rizzo, 2000c: 271, our translation). The struggle in the rural areas for a less unjust treatment gave rise at the end of the sixteenth century to the mechanism of '*equalanza*', whose aim was the equal distribution among the various communities of the state, including the cities, of the burden created by the presence of armies. The correct functioning of this mechanism was, though, always hindered by disputes between communities, which were to cause considerable tension throughout the seventeenth century (Rizzo, 2000c, 2001; Colombo, 2008).
59. In the sixteenth century, these expenses were financed mainly with the *soccorsi* (assistance) from other parts of the Empire (Sella, 1979; Vigo, 1979; Maffi, 2007). See Chapter 4.
60. This is the case of Brescia, supplied with iron and fuel from the surrounding valleys, where from the 1530s almost the entire production of pistols, harquebuses and muskets in the Republic of Venice was concentrated. The growing demand for firearms in Europe enabled the city to export 25,000 a year until 1562, increasing to 77,000 by 1600 (these numbers refer to the barrels of the weapons; part of the exports was made up of semi-finished products completed elsewhere).

The manufacture of arms in Brescia, whose products included as well as firearms their accessories and other weapons like swords, halberds and armour, employed (including supporting manufacturing services) around 40,000 workers (Hale, 1985: 221–2).

61. 'In war those who do not want to spend, spend more because nothing else requires more, and the greater the effusion of money and the more generous the supplies are, the quicker the undertaking is terminated. If to save money these things are lacking, the longer the enterprise takes, which results in greater expenses beyond compare' (Guicciardini, 1530: 170, our translation).
62. As Pierre de Bourdeille, the Abbot of Brantôme and a witness to the event wrote: 'To tell the truth, a soldier is not interested in the way the wind of war blows, if it is right or wrong, but where money can be made. And whoever gives him the chance to earn his bread is his father' (Brantôme, 1665, cit. in Harari, 2004: 101).
63. See also Enrico Stumpo's (1986) criticisms of Cipolla's thesis (Stumpo based these on the case of Piedmont), and Rizzo's (2007b).
64. Son of Pope Alexander VI, Cesare Borgia, having obtained his cardinalate in 1493, renounced it in 1498. Between 1499 and 1503, he conquered the Duchy of Urbino from the Montefeltro and most of Romagna as far as Ravenna. Cesare aimed to create a vast state under his rule in the centre-north of Italy, but he was frustrated by the unexpected death of Alexander VI (1503) when he was seriously ill and unable to take action (Chambers, 2006). Cesare Borgia's lack of scruples roused a mixture of horror and admiration in his contemporaries; Machiavelli in *The Prince* presented him as the model of a man who rose to power 'by luck': 'Cesare Borgia, called by the people Duke Valentino, acquired his state during the ascendancy of his father and on its decline he lost it, notwithstanding that he had taken every measure and done all that ought to be done by a wise and able man to fix firmly his roots in those states which the arms and the fortunes of others had bestowed on him. [...] If his dispositions were of no avail, that was not his fault, but the extraordinary and extreme malignity of fortune' (Machiavelli, 1532: 23). On the 'political' role of fortune, see also Buttay-Jutier (2008).
65. The conflict, part of the Thirty Years War (1618–48) in which Italy was definitely a secondary theatre, originated with the death of Vincenzo Gonzaga II, who left no direct descendants. Carlo Gonzaga Nevers, who belonged to a French branch of the family, claimed the right to the succession of the Duchies of Mantua and of Montferrat. Other pretenders (with weaker rights) were Ferrante Gonzaga II, Duke of Guastalla, and Carlo Emanuele I of Savoy in the name of his niece Maria, daughter of Francesco Gonzaga. France, Spain and the Empire were involved in the conflict, the cause of much devastation in the Po Valley, culminating in the sack of Mantua in 1630. With the peace of Cherasco the following year, the investiture of the Duchy of Mantua was awarded to Nevers, but he lost Montferrat, most of which passed to the Savoyes (Spagnoletti, 2003: 54–61; Parrott, 1997).

2 Famine

1. Food and Agriculture Organization (FAO) (2009).
2. To say nothing of the terrible 'state famine', with which in 1931–33, Stalin forced the Ukrainians and other populations under Soviet dominion into obedience, with an uncertain but undoubtedly enormous number of deaths, estimated at between

- 4 and 7 million people (Graziosi, 2004; De Rosa and Lomastro, 2005; Chlevnjuk, 2005; O'Grada, 2009). Concerning the famines that occurred during the World Wars, see Hionidou (2006) for Greece and O'Grada's (2009) overview for various parts of Europe and Asia.
3. Unless a shortage of food among human beings coincided with a famine among rats, something that in some cases certainly could have been true, but it is difficult to make generalizations. Neither is it feasible to think that hunger, forcing some people to eat mice and rats (some of which could be infected) was in itself sufficient to trigger an epidemic of plague. In fact, for an epidemic of bubonic plague caused by *Yersinia pestis* to develop, there must be an epidemic among rats at the same time.
 4. This opinion, which was very common at the beginning of the Early Modern era, to some extent found confirmation also in those medical treatises that maintained that plague was an 'infection of the air' (infettion dello aere). In this case, hunger would not have directly caused the disease, but would have contributed to creating an environment that favoured its development, especially because it induced people to eat 'corrupted' foods or foods ill-suited to human consumption. The most common consequence of such behaviour, however, was an epidemic of typhus and not of plague. For this, see Maurice Aymard's analysis (1973a: 24 ff.) The view that there was a connection between hunger and plague does not necessarily imply that the medical authorities of the time were wrong. As will be seen in the next chapter, in fact, the problem could depend on our mistaken identification of the pathogen agent or on its mutation.
 5. According to Vicente Pérez Moreda (2010: 211–12, our translation), who criticizes the traditional theory of the 'subsistence crises', 'it can be said [...] on historical and scientific grounds that mortality from [epidemic] crises led to famine just as the traditional theory can be upheld, a theory that maintains the linear and deterministic relationship between famine, the hunger (or undernourishment) that followed and the epidemic morbidity that results [...] in the mortality crisis'.
 6. See Cattini (1977) and O'Grada (2009: 4–7). More generally, on the question of the identification of the subsistence crises, it suffices to mention the classics Labrousse (1944) and Meuvret (1971, 1977). The issue has also recently been discussed by participants at the conference on 'A Critical Re-examination of Demographic and Economic Crises in Western Europe from the Middle Ages to the Early Twentieth Century', Ca'Tron Foundation, Treviso, 4–6 June 2009, and by the homonymous session of the World Economic History Conference, Utrecht, 3–8 August 2008. I will return to the definition of crisis, especially, but not only, in demographic terms.
 7. According to Sen (1981), the reduction in the supply of staple foods is a necessary, but insufficient, condition for a famine to occur. For this to happen, there has to be a deficiency in entitlement to the access of resources of a part of the population. In British Bengal, fearing a Japanese invasion after the fall of Rangoon in 1942, this would have been due to 'speculative withdrawal and panic purchase or rice stocks [...] encouraged by administrative chaos' (ibid.: 76). Regarding Sen's 'distributive' approach and the research that followed, see also Ravallion (1997), O'Grada (2009) and Strangio (1998).
 8. In fact, on a far larger scale than found for all other sixteenth-century calamities. See Figure 5.8 in the final chapter.
 9. This is a point convincingly stressed by Piero Camporesi. In his reconstruction (influenced, at least in part, by written sources whose reliability has often been

doubted – cf. Guenzi, 1995: 298 – and that should probably be toned down), ‘one of the collateral aspects of famine – not hitherto sufficiently taken into account – was the astonishing decline in a mental health that was already organically precarious and unstable, given that even in normal circumstances there was a dense and ubiquitous human fauna of imbeciles, idiots and cretins [...]. Poor nourishment exacerbated a biological deficiency and a psychic equilibrium already profoundly compromised (syphilis, alcoholism, etc.) and greatly impaired. [...] The effects produced by grasses and grains causing alienation and stupor remain unknown or virtually unobserved. [...] Unexpected artificial paradises opened before the underfed and the hungry: vast strata of the population, not only the outcasts but also the active and productive, were in the clutches of somnolence, dreams, sluggishness, a functional slowing-down and incoherence’ (Camporesi, 1980: 119–20, our translation).

10. Normally, darnel was carefully separated from the wheat. Pietro Andrea Mattioli, a doctor from Siena, for example, wrote that: ‘Bread, in which there are large quantities [of darnel] makes the men who eat it stupid and as if they were drunken, overcome by deep sleep, and therefore in Tuscany we very carefully remove the darnel from the wheat, to avoid the damage it causes to the head, making men drunk or causing them to fall asleep’ (Mattioli, *Discorsi*, 1550, cit. in Camporesi, 1980: 120–1, our translation).
11. During the night of between 23 and 24 of August 1572, the Feast of St Bartholomew, the Catholic faction in Paris massacred the Huguenots. The slaughter marked the beginning of the so-called Fourth War of Religion, of which the siege of Sancerre was one episode. The period of the French Wars of Religion, begun in 1562, ended only on 13 April 1598 with the proclamation of the Edict of Nantes by King Henri IV. Although Roman Catholicism was recognized as the state religion in France, Protestants were allowed to practise their religion with some restrictions, but their security was also safeguarded. In the first phase of the war, Blaise de Monluc, already mentioned for his role in the Italian Wars, was particularly active on the side of the Catholics.
12. In the edition annotated by G  ralde Nakam (1975).
13. Already on 11 January, a decree was issued to turn out of the city all of those unable to make a contribution in the case of a siege and those who were merely a liability for supplies: the poor, some of the women and children, some others. However, the decree was not enforced. As De Lery observes: ‘[the expulsion] would have prevented the great famine that later killed almost all of them, and made the others endure much suffering’ (Nakam, 1975: 102, our translation).
14. ‘Leather and skins beginning to be in short supply and to diminish, the most cunning and the most resourceful began to taste and try parchment: and as this was quite satisfactory, the enthusiasm was such that they ate not only the skins of white parchment but also of letters, [...] printed and handwritten books, unconcerned about eating the oldest and the antique between a hundred and a hundred and twenty years old. [...] I saw some eaten whose characters printed and handwritten could still be seen, and they could be read in the morsels that were on the plate ready to be eaten’ (Nakam, 1975: 284–5, our translation).
15. ‘On 21 July, it was discovered and proved that a wine grower, by the name of Simon Potard, his wife Eugene, and an old woman who lived with them, whose name was Philippe de la Feuille, also known as the Emerie, had eaten the head, brains, liver and innards of their daughter of about three, who had, however, died of starvation and of consumption. This fact did not fail to astonish and appall all

those who learnt of it. And having been taken by some to their place of dwelling, and having seen the bones, and the skull of this poor child's head, scraped and gnawed, and the ears eaten, having also seen her tongue, as thick as a finger, cooked, which they were about to eat when they were discovered: the two thighs, legs and feet in a cauldron with vinegar, spices and salt, ready to be cooked and put on the fire: the two shoulders, the arms and hands kept together, with the breast cut and opened, also ready to be eaten, I was so frightened and bewildered, that all my bowels were moved' (Nakam, 1975: 291, our translation).

16. To the destruction of the means of production can be added the consumption of seeds that should have been kept for the next harvest, thus compromising the productivity of the farms (Cattini, 1977).
17. 'In less than six weeks, dysentery and hunger killed at Sancerre six times more people than the sword in the seven-and-a-half months that the siege lasted' (Nakam, 1975: 301, our translation). In Siena, it will be recalled, a considerable number of the approximately 10,000 victims is made up of the useless mouths who were expelled and perished, almost all of them in sight of the city walls.
18. '[In the year 1591], there was a very great and remarkable famine throughout Italy and principally in Bologna, such as never had been seen in the past, because besides having harvested almost no wheat and *marzatelli* [early cereals], nor fruit, nor grass in the fields and the countryside, the cows, sheep and other similar kinds of animals did not give the customary yield [...] many families for months at a time had, like beasts, to eat the little grass that they could find, cooking it with bran; and in many mills they ground bran, grape seeds, dried grass roots; and wheat was worth twenty-two lire in town and twenty outside' (cit. in Predieri, 1855: 66, our translation).
19. For example, in Emilia, the passage from open fields to *chiusure* (enclosed fields) and from this to *piantate* (planted fields). This process began towards the end of the sixteenth century and was already largely completed around 1620 (Cattini, 1984: 28–37). See Chapter 5 for more details.
20. During a crisis, even when mortality is not very high, there can be an appreciable drop in births due to the combined effect of four factors: '(1) a variation in the number of women exposed to the risk of conceiving, because of a decline in marriages; (2) a variation in the number of women of child-bearing age due to high mortality or emigration; (3) a decrease in natural fertility caused by adverse health conditions or by a state of malnutrition (amenorrhoea), or by an increase in the number of miscarriages; (4) finally, a variation in the legitimate fertility due to factors that broadly speaking can be described as "voluntary"' (Del Panta, 1980: 90, our translation).
21. Defining as 'probable' a crisis where I verified a fall in births equal to or above half of the average value found in localities where there definitely was a crisis, 'possible', instead, if there was a fall in births between half of that average value and 4 per cent of the 'normal' level (I arbitrarily chose this value in order to exclude from the hypotheses on the crises most of the fortuitous fluctuations in births). To measure the fall in births, the value in the years of crisis has been compared to the 'normal' value (defined as the average number of births during the five years prior to the crisis, excluding, however, the maximum and minimum values). This technique, its merits and its limitations have been analysed in greater detail in Alfani (2004b).
22. I will return to this subject in Chapter 5, where I will deal specifically with sixteenth-century agricultural innovations. See also Appleby's (1979) penetrating

comparative investigation on England and France that highlights the connection between varieties of cereals cultivated in different areas and at different times and the exposure to the risk of famine due to bad weather. As in rural areas in northern Italy in the sixteenth century, the maximization of the product did not match the minimization of the risk of crop failure.

23. In the communities marked 'Assumed crisis', the fall in births is equal to or greater than 28.5 per cent (for example, 34.1 per cent in Ravenna or 70.9 per cent in Carpi); where there is a 'Probable crisis', it is between 14.25 per cent and 28.5 per cent; 'Possible crisis' corresponds to a fall of between 4 per cent and 14.25 per cent; finally, an 'Absence of crisis' indicates an increase in births or a fall of less than 4 per cent. Note that in this case, and also because of the lack of available series, there are no community figures in the intermediate typologies of 'Probable crisis' or 'Possible crisis'.
24. See Andrew Appleby's methodological proposals (Appleby, 1973).
25. See, for example, the epidemic of dysentery or *flusso* (flux) that broke out in Mantua in 1591. Although it also killed many adults, most of the victims of the illness were children between one and nine years of age (Belfanti, 1982: 134–5).
26. Although their names are similar, abdominal and petechial typhus are completely different diseases. The former, also called 'typhoid fever' or 'enteric fever', is caused by a salmonella bacillus and is transmitted via polluted water, drunk directly or via foodstuffs. The petechial or 'esantematic' typhus, instead, is caused by rickettsiae-type germs and is transmitted by fleas; the characteristic symptoms are high fever and skin rash (petechiae).
27. I will come back to typhus in the next chapter.
28. According to Corradi, between 1569 and 1570, a serious drought followed by a harsh winter brought about a famine that encompassed Milan, Venice, Bergamo and Brescia, with after-effects that lasted up until 1573, which also hit other parts of Italy: the area round Mantua, Lombardy and Florence (Corradi, 1973: 566–77). This has been confirmed by Roveda (1985: 35) for the area of Lodi and by Politi (1976: 161–2) for the area of Cremona. The famine of 1586–87 initially involved Piedmont and some areas of northern and central Italy, including Florence, and then spread to most of the Peninsula (Corradi, 1973: 651–2). In 1587, at Arborio, a city in Piedmont near Vercelli, anonymous graffiti writers recorded on the walls of a church a situation of extreme dearth (*penuria maxima*). Similar graffiti were engraved in 1592 and 1628 (my thanks go to Véronique Plesch for this information, shortly to be published in a book on the huge corpus of graffiti in Arborio; see also Plesch, 2005). In all of these cases, it is possible to attribute the famine to climatic-meteorological adversities, which became more frequent in the phase of rapid cooling of the 'Little Ice Age', in a situation of increasing pressure on resources (see later on in this book, and also Alfani, 2010a). The fact that the food crises in the 30 years prior to the great end-of-century famine were not generalized meant that there was also a regional and subregional variability in the chronology of the crises. For example, in the Marches, there was dearth or famine in the years 1565, 1570–73 and 1588 (Sori, 2005: 17).
29. The original estimate of the funds needed to supply the city (50,000 scudi estimated in July 1590) quickly proved to be extremely optimistic. Once it was discovered that finding cereals in the area of Milan was impossible, the authorities in Modena turned to Mantua and to Tuscany, then to Apuglia and to Sicily, each time without much success, so that already in September the estimate of the funds urgently required had risen to 250,000 gold scudi. It has been calculated

that by the end of 1593, the expense of the city of Modena alone for the purchase of wheat from abroad amounted to 3.5 million lire, equal to almost 640,000 gold scudi (Basini, 1970: 68–73).

30. See the model proposed by Marco Cattini (1977), which I will return to later.
31. This measurement, like the one regarding burials, was obtained comparing the average number of births for the period 1586–90 with those for 1591–92 (the acute phase of the crisis).
32. Figure 2.3 can in any case be interpreted in the light of the method introduced by Del Panta and Livi Bacci (1977). In fact, if we consider that the two authors identify the threshold of the important crises with an increase in the number of deaths of at least 50 per cent, and if we take into account that, on the map, the points marked as 'Probable crisis' indicate an increase in burials of between 50 per cent and 90 per cent, while those marked as 'Assumed crisis' refer to places where there was a 100 per cent or more increase in burials, it is only the points of 'Possible crisis' or 'Absence of crisis' that correspond to areas where the rise in mortality was not so high as to determine lasting demographic consequences. It is also to be remembered that a modest increase in mortality can, however, be accompanied by a far more significant contraction in the number of births, as can be seen in Figures 2.2 and 2.3, by comparing births and deaths in the western part of the territory of Mantua.
33. The word *contado* refers to the countryside surrounding a city, and which was subject to its authority since ancient times.
34. Also see Chapter 4.
35. Generally speaking, in the Duchy of Mantua, the population moved from the areas in which small peasant farms prevailed to those where large estates with privileges were more common. According to Corritore's interpretation (1996: 189–90), the small landowners, impoverished and oppressed by the tax system, found themselves forced to seek employment as salaried workers for the great aristocratic landowners who benefited from generous tax exemptions.
36. The Lomellina is an area in the southern part of Lombardy in the territory of Pavia.
37. Actually, the readiness of the authorities to intervene in order to mitigate the effects of the famine was very variable, like the effectiveness of the action taken. In a rare comparative study, Marzio Romani records, on the one hand, the short-sightedness of the authorities in Mantua and, on the other hand, the foresight of the Farnese Dukes of Parma, who not only were the first to buy up grain, but took the opportunity to launch work on the building of an impressive public construction, the Cittadella, which enabled them to provide work and therefore a livelihood for the poverty-stricken during the crisis (Romani, 1983).
38. As will be recalled, Sen (1981) focuses his attention on the decline of income as a cause of insufficient entitlement for access to resources. Our study of the famine of the 1590s, instead leads us to underline the different juridical *status* (of city and country dwellers; of citizens, of *forestieri* and of the useless) as the cause of an insufficient entitlement to obtain the meagre food resources available.
39. Despite their efforts, the city authorities could not completely keep in check a definite rise in petty crime, often occurring between neighbours, and a general deterioration in collective behaviour. So, in Bologna, there were daily brawls for bread in front of the bakers; houses and shops were constantly subject to the risk of being plundered; the city was full of desperate women prostituting themselves for a lump of bread (Alessandro Barbieri, cit. in Corradi, 1973: 663). The moral deterioration brought about by the famine is also obvious, in Parma, for example,

from the increase in illegitimate births during and immediately after the famine. Romani (1975: 75, our translation) interpreted this also as 'a temporary erosion of those moral values that had been restored by the Counter-Reformation'. To this we can add the increase in the number of abandoned children, and possibly even of infanticides, to be found throughout Italy during the famine years (Hanlon, 2003; Hynes, 2011).

40. This is not the place for a detailed analysis of the nature and origin of brigandage, an extremely complex phenomenon, with at the same time a social, economic and political significance (for a synthesis of this, see Aymard, 1986). I will merely note that, as shown by the case of Nonantola analysed later, brigandage itself (even in its very different forms) is only one of the features of a general increase in violence and of the temporary breakdown in social and community equilibriums in times of famine: phenomena that result in an increase in petty crime, a rise in disputes between neighbours and so on.
41. 'In the last decade [of the sixteenth century], famine, the succession of bad harvests, the debts of the peasants and the increase in taxation – as contemporaries observed – were certainly determining factors in spurring to join the brigands those who had even casual contacts with outlaws, and therefore came to be accused of the same crimes as those who for a long time had ravaged the countryside pillaging and killing' (Polverini Fosi, 1985: 199, our translation). The poverty-stricken peasants often found themselves having to choose between two ills: joining a band of outlaws with the risk of being punished by the authorities, or becoming prey to those same bands and anyway being regarded by the authorities with suspicion as potentially conniving with the outlaws.
42. Estimated on the basis of a *Boccatico del Sale* (Salt Tax Register). Municipal Archive of Nonantola, *Ruolo di popolazione – Boccatico, 1629*.
43. All the surviving Italian *Partecipanze agrarie*, except for the one at Trino Vercellese in Piedmont, are to be found in Emilia (at Nonantola; at Sant'Agata Bolognese; at San Giovanni in Persiceto; at Cento; at Pieve di Cento; at Villa Fontana). In their present form, they are 'collective domains of a mainly allodial origin where the land is redistributed periodically according to [precise but variable from place to place] norms and periodicity' (Giacomelli, 1992: 96, our translation). For their history, see also Andreolli (1992) and Alfani (2007a, 2011a).
44. *Bocca morta* (dead mouth) and *Bocca viva* (living mouth) were the names given to the two groups of those who had the right to use the common lands in Nonantola. Considerably simplifying the matter, at the end of the sixteenth century, the *Bocca morta* corresponded to the owners of land listed in the *estimo*, or property tax register, who were relatively well-off. The *Bocca viva* instead included those who were not property owners and were of more humble backgrounds. For further information, see Alfani (2007a, 2011a).
45. This can be seen from the *charta* dated 1058 with which Gotescalco, Abbot of Nonantola, designated these lands to the *populus* of Nonantola in a form similar to that of a perpetual emphyteusis (Andreolli, 1992: 17–19; Alfani, 2011a).
46. Even though already in 1590, mortality amply exceeded the norm (80 burials altogether), unfortunately for this year the poor quality of the registers makes it impossible to divide the burials per month.
47. A cycle that substantially corresponds to that of the 'seasonal' prices on the urban markets, even in normal years. See, for example, Dante Zanetti's comments (1964: 108–11) for the market of Pavia.

48. *The Capitano di Ragione*, or 'Captain of the Reason', was the officer responsible for administering justice within the community. Municipal Archive of Nonantola, Aggregato-Giusdienza Archive of Nonantola, Atti criminali del Capitano di Ragione: *Libri Querelarum*, January–February 1592.
49. A long list follows of stolen possessions and foodstuffs (*Libri Querelarum*, 18 March 1591).
50. Here, for example, is the statement of the assault on *messer* Luca Ansaloni's abode in July 1592: 'On Wednesday night as Thursday was approaching, at around three in the morning, there were about nine men armed with harquebuses and daggers who climbed over the door and entered the stable and called and knocked on the door and a servant replied and said who is that and they replied open the door and so once the door was open they said to him we want to eat and drink, and he replied I am not the master of the house, neither is there bread, and so they said call the master and so he came out of the stable, and went away across the fields and these men ran after him and forced him to come back and once in the courtyard he started to call the forementioned *messer* Luca his master who replied and said what do you want and he said that some had arrived in the courtyard and wanted to eat and drink and then the said Luca told them there wasn't any bread, and the said men told to the said *messer* Luca send us bread and wine so we can eat a little because we are armed, and then we will go on our way, and so he gave them a little bread, borrowed from the Ansaloni [...] and they started to eat and drink, and once eaten and drunk they went away and they did nothing else' (*Libri Querelarum*, 3 July 1592, our translation).
51. Parish Archive of San Michele of Nonantola, *Registers of Burials*, 1574–1678, 11 March 1591. Another man was executed on 19 June that year.
52. In Modena, for example, prices of wheat peaked in 1601–02, 1608, 1621–22 and 1629 (Basini, 1970: 91).
53. 'The primary function of institutions responsible for cereals was to transport foodstuffs from where they were produced to where they were consumed. The distance between the two points could only complicate the operations and make them more expensive, but certainly could not interrupt them because availability of cereals was essential' (Strangio, 1998: 163–4).
54. If some cities, like Milan, in normal years could profit from a *surplus* of cereals produced in their own territory (Parziale, 2009: 19), others, for example Bologna, Modena or Genoa, were obliged to cope with a situation of perennial, or practically perennial deficit (Basini, 1970: 50; Grendi, 1970; Guenzi, 1979: 372). Whatever the actual situation, the food-provisioning authorities tended to regard alimentary resources in the neighbouring territory as the first over which to gain control, both because the main quota of provisions usually came from them (for example, even in Modena, which usually had a deficit, an average of two-thirds of its needs was anyway produced locally), and because provisioning from abroad was also subject to specific uncertainties, especially in times of widespread dearth or famine.
55. The *calmiere* was a list of reference prices, compiled by city officers and put on display in public places to enable buyers to avoid being cheated. In times of severe crisis, the prices in the *calmiere* were also meant to induce sellers (grain merchants, bakers and so on) to make basic foodstuff available at fixed prices.
56. So in Modena, in order to calculate the *calmiere* prices, 'from time to time the average of the three highest prices on the market will be taken' (cited in Basini,

- 1970: 30). In Milan, 'each week and as reliably as possible the real and regular current prices of wheat in places will be observed [...] and especially in the sites where public markets are held' (cit. in Parziale, 2009: 107, our translation; and at pp. 100–11, this reference can be consulted for a more general discussion on the way in which the *calmiere* prices were fixed and on their relationship with market prices). For the case of Milan, see also De Maddalena (1949).
57. In Mantua, during the famine of the 1590s, the struggle to prevent wheat from being smuggled outside the territory was one of the main concerns of the authorities of the duchy. Three armed boats constantly patrolled the Po to intercept clandestine trafficking and it was ordered that smugglers caught in the act should be hanged without trial. The situation was complicated by the fact that the great landowning aristocracy was also involved in these illegal activities, to such an extent that in August 1592, Vincenzo Gonzaga I had to make a personal appeal to the great landowners not to put the capital city at the risk of starvation (Belfanti, 1982: 109–10).
 58. For example, Massa (1999) for Genoa; Basini (1970) for Modena; Zanetti (1964) for Pavia; Guenzi (1978 and 1982b) for Bologna; Orefice (1995) and Parziale (2009) for Milan; Palermo (1990) for Rome; Corritore (2000) for Mantua; Mattozzi et al. (1983) for Venice; and Pult Quaglia (1990) for Florence.
 59. Municipal Historical Archive of Ivrea, *Categoria 14 (Censimento)*, no. 1750. It is probably a document written for the division of the *soccorso miliare* or 'military aid' (an extraordinary tribute), in compliance with an 'Instruction' addressed to the 'agents of the Community' dated 14 November 1613. The Instruction ordered that the information required be transmitted within ten days. For further details on the source, see Alfani (2010d).
 60. See also Alberto Guenzi's powerful description of the uprising in Bologna in 1648, which gives an exceptional account of the reasons of the people who were protesting against the food-provisioning authorities (Guenzi, 1979).
 61. 'Andrigetto, then, being extremely wealthy, and having much wheat and other kinds of grain, supplied by his farms, dispensed all his revenue to poor peasants and to other miserable persons, neither did he wish to sell that to merchants or others for money. And he did this not because he had at heart to succour the poor, but so that he could take from them some lands, and enlarge his farms and revenues; and he always tried to choose places that brought him profit, and little by little he took possession of everything. It happened that in those parts there came a great penury and it was such that men, and women and children were in many places found dead of hunger. For this all, the neighbouring peasants, both from the lowlands and the mountains, turned to Andrigetto; and some gave him a meadow, some a wood, and some a field of ploughed land, and in return, received as much wheat or other grain that they might need. Such was the number of people who came from all parts to the house of Andrigetto, that it seemed like a Jubilee' (Straparola, 1556, Book II, Night X, Tale IV, our translation).
 62. Ibid.
 63. As Marco Cattini has demonstrated (1984, 2009), the sharp drop in prices in years of good harvests subsequent to a famine – due to the market forces of supply and demand – obliged those who had borrowed in kind, but had measured in money the amount due, 'to give back two and sometimes threefold the amount of grain previously borrowed to eat and to sow, at such high implicit interest rates as to make them undoubtedly usurious' (Cattini, 2009: 136, our translation).

3 Plague

1. According to recent estimates, the Spanish influenza in Europe caused 2.5 million deaths (390,000 in Italy, with an overall mortality rate equal to 11 per 1000) and worldwide between 50 million and 100 million victims (Johnson, 2003: 43–4). It was one of the three most terrible pandemics in the history of mankind; the other two are the plague called the ‘Plague of Justinian’, as it occurred when Justinian I was Emperor of the Eastern Roman Empire, and the Black Death that, coming from Asia, raged in Europe between 1347 and 1351.
2. At the time of the final draft of the Italian edition of this book (November 2009), for some months there had been a pandemic of ‘swine flu’ or ‘influenza AH1N1’ and the World Health Organization had declared a state of maximum epidemic risk since 3 June. In terms of increased mortality, the expected consequences were anyway extremely limited, and this was confirmed by the actual development of the pandemic in 2009–10. It is worth underlining that until the unexpected onset of this pandemic, the main concerns had focused on a possible mutation of avian influenza.
3. The disease had disappeared from Europe after about 750, when an epidemic cycle ended that had begun with the Plague of Justinian in AD 541–44, which probably was the second worst plague that has ever infected the continent (Little, 2007). If the prevailing view is that this was the same disease as the one that reached Europe in the Middle Ages, some uncertainties remain, just as the reasons for its disappearance after the sixth century pandemic remain a mystery.
4. For the case of Italy, there are Lorenzo Del Panta’s (1980) classic work on epidemics in the demographic history of the Peninsula, and Samuel K. Cohn’s (2002) more recent analysis, based on a comparative examination of the chronicles and the oldest ‘tracts of the plague’. For the general characteristics of the epidemic of 1347–51 in Europe, I will limit myself to mentioning some recent monographs: Aberth (2001), Benedictow (2004), Kelly (2005), as well as classics like Biraben (1975), Gottfried (1983) and McNeill (1981).
5. The decline in the severity of the plagues, starting from the second half of the fifteenth century, together with a significant improvement in the treatment (especially the incision and the treatment of buboes), would have generated in the doctors of the time, and more generally in a wide circle of ‘thinkers of the plague’, the conviction of finally having managed to outdo the *auctoritates* (authorities) of the past, who had been unable to treat the illness. This success would have been a decisive incentive in the inception of a new way of looking at human beings and their potentialities. However, the epidemics of the late sixteenth and, above all, the pandemics of the seventeenth century, would soon clearly prove that this ‘victory’ over the plague was only partial.
6. For the contest that saw Yersin as the winner, see Mollaret and Brossolet (1985) and Cohn (2002).
7. Actually, this species of flea is not really suited to the climatic conditions prevalent on the European continent. Over the years, it has been suggested that other species of fleas (like *Nosopsyllus fasciatus* or *Pulex irritans*) acted as vectors in the historical plague. For a synthesis on this subject, see Audoin-Rouzeau (2003).
8. The lethality rate is calculated from the number of deaths compared with the number of those infected. Therefore, it is not to be confused with the mortality rate that is based on the number of deaths compared to the population of reference.

9. The colonial health authorities were to have numerous opportunities to study the disease during the Asian epidemics in the first half of the twentieth century, like the doctors who had to deal with much less frequent epidemics in the second half of the century. None of these episodes, however, are comparable in severity or territorial extent to the plague pandemics that broke out in Europe, Asia, Africa and (after Columbus) also in the Americas, up until the late eighteenth century, with the possible exception of India, where in the ten years following its appearance in Bombay (1898), in a chain of epidemics, about 6 million died (McNeill, 1981: 140). The fact that medical-scientific progress was very slow to understand, treat and control the disease demonstrates the complexity and the 'strangeness' of *Yersinia pestis*.
10. If this hypothesis is examined closely, it presents also other and more serious problems of plausibility, seemingly incompatible both with the symptoms described by the sources (chronicles and 'tracts of the plague' in *primis*), and with what we know of *Yersinia pestis* in its pulmonary form. Not even during the worst twentieth-century epidemics of pulmonary plague (among which the most serious was probably the one that infected Manchuria in 1910–11, with a second epidemic in 1920–21; see Scott and Duncan, 2001, as well as Wu Lien Teh's original description 1922–23), did this disease show that it was capable of spreading from person to person with the same efficiency and rapidity taken for granted by many of the historians and demographers who took part in the debate during the 1960s and 1970s. This is simply because it kills the infected people too quickly to allow them to transmit the infection widely, as can be demonstrated with simple exercises in epidemic modelling. For some basic notions on epidemic modelling, see Daley and Gani (1999); for its application in pneumonia plague, see Scott and Duncan (2001) and Gani and Leach (2004).
11. Although it cannot be excluded that in very specific environmental circumstances, the *Pulex irritans* might have contributed to the spread of the infection, it seems impossible to attribute to it the dominant role that Biraben envisaged. Laboratory experiments confirming that this species of flea is not really adapted to transmitting the disease bear out this theory (Benedictow, 1987; Audoin-Rouzeau, 2003; Alfani and Cohn, 2007b; Cohn, 2008).
12. According to Scott and Duncan's theory, the period of infectiveness (during which the infected person can transmit the disease) lasts 25 to 27 days, of which only the last 5 are characterized by visible symptoms. The period of infectiveness is preceded by a 10- to 12-day period of latency (when the individual is already infected, but not contagious), for a total of about 37 days from the moment of infection to death. These characteristics would allow the person infected to travel long distances and transmit the contagion before any visible sign of the disease appears (Scott and Duncan, 2001: 128).
13. In particular, the interval between deaths in each household, which appears to be extremely close and essentially incompatible with the long phase of latency foreseen in Scott and Duncan's theory. For example, during the plague in 1523, in Milan, 24.5 per cent of the deaths occurred at the same time as at least another decease in the same household (Alfani and Cohn, 2007a).
14. In fact, none of these authors deny that the plague took place. However, they all hold that it was a different disease from the *Yersinia pestis* of the twentieth century.
15. Using a database of biomedical variables constructed from 400 chronicles related to plagues that occurred between 1347 and 1450, 250 plague tracts, 50 lives of

saints and still more, Cohn has tried to show that the symptoms and general characteristics of the historical plagues did not in any way correspond to what was observed during the twentieth-century epidemics (Cohn, 2002), unless admitting that all late medieval medical writings (but the same could apply to those of the Early Modern Age; Cohn, 2010a) systematically supplied distorted descriptions of the disease. For example, regarding the buboes, their number and their position do not correspond to what would be expected from an infection of *Yersinia pestis*: in fact, they are more numerous and spread over all the body (while in the case of contemporary *Yersinia pestis* they develop round the lymphatic glands, and mainly in the groin; Cohn, 2002: 77–82). Only about 16 per cent of the chronicles examined by Cohn identify the plague by marks on the skin (as well as buboes, the ‘carbuncles’, black marks that appeared on the body: very rare in cases of contemporary *Yersinia pestis*). It was, rather, the epidemiological factors that made an impression on contemporaries: the extremely high mortality; the geographical extension; the speed with which the disease spread and killed its victims; the terrible ‘contagion’. It was on the basis of these factors that late medieval doctors established the presence of plague (Cohn, 2002: 99ff.).

16. The time span in which *Yersinia pestis* ‘could have’ evolved from *Yersinia pseudotuberculosis* is, though, much broader, between 1500 and 20,000 years or thereabouts.
17. This is Priuli’s account: ‘In these days (year 1506) in the city of Venice there was an influenza of sickness, and a certain fever, we can say almost pestilential [...], with some marks of the people, whence came the name given to this illness, *Pettecchie*. To which the Venetian doctors, always in Venice there are very able doctors, the first in Italy because they earn large sums of money, at the onset of this sickness all the doctors performed phlebotomies, *idest* drawing of blood, and everyone died after the blood-letting. [...] Seeing that blood-letting was counter-indicated, the doctors decided to try another experiment, and to the sick with this illness they decided to bleed them with cupping-glasses, which was *intram pellem* [within the skin], *idest* with cupping-glasses blood cannot be taken except from the skin, and it seemed that this gave great relief, and with this remedy many were cured. And even doctors cannot understand everything, and with experience and time learn, *quia nemo natus est magister* [as nobody is born a professor]. [...] *Tamen* many died before the way to cure them was found. Neither Avicenna, nor Galen and other learned writers in medicine even described this illness in their writings, because nature produces diverse deadly illnesses, and only with experience a remedy is found. Truly at the beginning of this negritude the doctors immediately drew blood and opened the veins, and of ten sick people, eight died and only two survived’ (cit. in Corradi, 1973: 375–6, our translation).
18. Except for some limited episodes, probably the main one being the plague that struck part of Friuli and the Veneto, and especially the cities of Venice, Padua and Udine in 1555–56 (Corradi, 1973: 510–22).
19. Borromeo was also author of a *Pratica per i curati, et altri sacerdoti, intorno alla cura dell’infermi e sospetti di peste* (‘Instructions to curates and other priests regarding the care of the sick and those suspected of plague’), which, among other things, authorized the concession of plenary indulgence to priests, doctors, nurses and others who agreed to carry out particularly risky tasks (like administering the sacraments to those infected or taking their pulse). The general aim was to encourage the community to care for the plague-ridden. For this and other writings by Borromeo regarding the plague of 1575–77, see Cohn (2010a).

20. The plague in Sicily was also extremely serious: in Palermo, infected in 1575–76, 3100 people died. If we assume the population numbered 75,000 to 80,000 inhabitants (Aymard, 1973a: 18, 30), we can calculate a mortality rate of between 39 to 41 per 1000: certainly high, but not exceptional like the Plague of San Carlo in the north or the seventeenth-century plagues. If this circumstance corroborates the theory that it was a different epidemic (although still an epidemic of plague) from the one that at the same time struck the north of Italy, it should be remembered that the Sicilian city worst hit by the disease was Messina, and that in Trapani, where the epidemic lasted just ten months, about 10,000 people died (Corradi, 1973: 589).
21. The availability of parish registers of burials, made compulsory by the *Rituale Romanum* of 1614, enables us to carry out micro-demographic studies, focused on communities of a manageable size, studies that would otherwise be impossible except in particular circumstances. So, for example, for Nonantola in 1630, in the area of Modena it is possible to estimate a mortality rate equal to 258 per 1000 (Alfani and Cohn, 2007b), and for the little village of Cella di Palmia in the area of Pavia, one of actually 817 per 1000 (Manfredini et al., 2002). Other mortality rates have been calculated and collected in Alfani (2010b).
22. Like the crisis of 1527–29, examined in the second chapter, where there were both plague and famine.
23. The reduction in births that I found in the two centres is considerable: 22.4 per cent in Finale and 35.5 per cent in Rapallo.
24. Different parts of the same state could also be separated by sanitary cordons to prevent the contagion from spreading. Thus the general health magistrate of Turin ordered the Piedmontese communities bordering not only the Dauphinate and Provence but also Savoy (the 'French' part of the duchy) to set up guards at the passes. The '*particolari di là dai monti*' ('the individuals residing beyond the mountains') were forbidden to enter Piedmont by 'cross-country and uncommon routes at the risk of being sentenced to the galley' (Picco, 1983: 23, our translation).
25. In Milan, in 1575–76, the number of those requiring public assistance exceeded 50,000, equal to about 45 per cent of the overall population (D'Amico, 1994: 135).
26. To be effective, a sanitary cordon had to be total, which therefore meant employing men and means in quantities mostly independent of the severity of the actual epidemic (if measured in terms of the spread and lethality of the contagion, but not of its duration. In fact, the latter variable is essential to explain the amount of the overall expenditure).
27. The cities of mainland Veneto, as well as Venice itself, at the end of the epidemic found themselves heavily in debt, despite their systematic pillage of the Monti di Pietà. In August 1577, the public debt of the Republic of Venice reached 5,714,439 ducats, on which an interest was paid that varied between 7.5 and 14 per cent. This involved an annual expenditure of over a half a million ducats in interest (Preto, 1978: 134–43).
28. The series of baptisms celebrated in Ivrea between the end of the fifteenth century and 1600 is published in Alfani (2004a).
29. Municipal Historical Archive of Ivrea, *Categoria 72 (Pestilenza)*, no. 3410.
30. This sum, moreover, does not include the expenses borne for the Church of San Rocco, which, destroyed in 1544, was rebuilt or completely restored in 1585 in order to secure the favour of the saint (Perinetti, 1989: 230). The procession held

on 22 September had a similar purpose but seems unlikely to have been able to limit the spread of the contagion (Giglio Tos, 2002: 141–2).

31. In 1576, even taking into account their different dimensions, Milan bore the brunt of far larger expenses for the provisioning of those infected and those suspected of infection, who were shut away in 200 wooden huts built at each city gate. As Giacomo Filippo Besta informs us, 'To feed those wretched people each day they distributed to the healthy and poor 28 ounces of mixed grain bread, to the frail and to those accustomed to living more delicately 20 ounces of white bread, and 28 ounces of pure wine, a soup of rice, or other kinds of food suitable for the sick, dressed with vinegar. To the healthy women, and children 26 ounces of bread, made in the same way and for those who were frail 16 ounces of white bread, 10 ounces of pure wine, and a soup, as said above. For the sick, wheat bread and the kind of food that the doctors ordered day by day, and each of them had two stone bowls and a jug, in which they received the food from the ministers of their classes, who had two measures with a handle about two-and-a-half arms long, and distributed once a day bread and wine, and twice a day soup, which was prepared in these huts, to give them tasty food at a cost to the community of 105,339 lire' (Besta, 1578: 20–1, our translation).
32. State Archive of Turin, *Notai di Ivrea*, primo versamento, no. 25, PQ 59, Notaio Alberto Gerolamo, Protocollo, 1585.
33. State Archive of Turin, *Notai di Ivrea*, primo versamento, no. 5423, PQ 75 3, Notaio Marchione Stringheri, Minutario, 1585.
34. The disruption of notarial activity, which in the societies of the *Ancien Régime* pervaded economic life (and not only this) of people of all classes, gives an idea of how societies in the past, even though damaged and convulsed by the contagion, were usually able somehow to avoid a complete breakdown. With regard to notaries' activities in times of plague, see also Dolan (1998).
35. 'To Your Highness the Duke
 Gio Domenico Bima, boatman from Ivrea, when the need was to cleanse the feathers that were infected due to the contagion present in said City in the year 1585, was charged by the health council that existed at the time to transport all the feather beds that had been stacked outside the gate of Bando of said City, along the river Dora aboard his ship, to the Canavese bridge and the places where the *monatti* were cleansing the feathers, and this during two full months without interruption and at his own expense, and for this task also anticipated to the City, among other things, over 50 scudi worth of wood to be used in the *caldare* [...] and even if for this good work he asked many times the agents of the City to pay his due, they never did it. Instead they continuously refuse. Consequently, as it is reasonable that every worker receives his rightful compensation, he had to turn to Your Highness. He humbly implores that the *podestà* [chief magistrate] or whoever is seen fit, is charged, after having collected information about this good task, with ordering the agents [of said City] to pay the due, establishing a tariff consistent with the work done and with the consideration of the season when it was done and the danger to life incurred by those who had to handle and to transport things full of contagion' (Municipal Historical Archive of Ivrea, *Categoria 72 (Pestilenza)*, no. 3412, our translation).
36. 'To Your Highness the Duke
 Batista Mastalone innkeeper of the Croce Rossa of Ivrea was ordered and forced in the year 1585 by the agents of the Magnificent City to lodge in said inn the Borgatino who had been sent [to Ivrea] as health superintendent by the

Magistrate, to whom he provided victuals for many days until he infected the said inn, from which infection the wife of said innkeeper and other servants who did not leave the house died and which required the cleansing of all his furniture and linen which incurred great damage and deterioration and were lost, for these damages he demands to be refunded by the said City because if its agents had not forced said innkeeper to lodge the said Borgatino, without this lodging said inn would not have been infected because he was locked in his house and for this reasons he is making this claim' (Municipal Historical Archive of Ivrea, *Categoria* 72 (*Pestilenza*), no. 3413, our translation).

37. Municipal Historical Archive of Ivrea, *Categoria* 72 (*Pestilenza*), nos 3414–18.
38. Is it fortuitous that the spread of the epidemic at the end of the sixteenth century towards the east came to a halt near the border of the western extension of the Plague of San Carlo? And is it fortuitous that, in the following century, the plague of 1656–57 spared the very areas in which the plague of 1629–31 raged? Or, in the two cycles, had the populations first infected acquired a certain degree of immunity to the disease, sufficient to protect them from the plagues that occurred in the years that immediately followed? Finally, is it on account of a phenomenon of immunization that Ivrea, struck by the 'local' plague in 1585, was only slightly touched by that of 1599, which raged throughout most of Piedmont? If the historical plague was caused by the bacillus of *Yersinia pestis*, then we must conclude that the territorial complementarity of the late sixteenth- and seventeenth-centuries epidemics is fortuitous, or due to the health authorities operating in a different way, guided by experience in areas already struck, less efficient in those not accustomed to the epidemic. This latter hypothesis not only lacks proof for the moment, but should take into consideration the alternation of different generations of doctors, otherwise it is not possible to explain the reproduction of analogous phenomena between the sixteenth and seventeenth centuries. What is certain is that human populations *cannot* acquire immunity to *Yersinia pestis* over long periods (Pollitzer, 1954: 133, 511; Manson-Bahr and Bell, 1987: 591). With regard to the complex question of the complementarity of seventeenth-century epidemics, see also Alfani and Cohn (2007b) and Alfani (2010b, 2011b). About the possibility that Sicily was spared the plagues of 1629–31 and 1656–57 because it was immunized by the epidemic that occurred in 1625, see Aymard (1973a: 12).
39. In Turin and in part of Piedmont, the years immediately prior to the plague were years of shortages (Picco, 1983: 11 ff.). It was, however, a 'normal' shortage: nothing in comparison with the terrible famine that struck other parts of Italy at the beginning of the decade.
40. According to Roffredo, a witness to the first part of the epidemic, who then took shelter outside the city, the plague took a toll of 8000 victims in Turin, that is about half the population. It has, though, been maintained that this is an exaggerated estimate and the loss of lives was 'only' about 10 per cent (Picco, 1983: 196). It seems certain that the mortality was anyway somewhere between these two extremes.
41. The whole source is published in Picco (1983: 198–299).
42. This amounted to 148,721 florins. Ordinary income ensured just 13,848 florins (7.3 per cent of the total), the remainder came from various extraordinary incomes, among which there was a small contribution (2.5 per cent of the total) from the Treasury of the Duchy.
43. In 1482, in Barcelona, a votive 'anti-plague' candle was made that was as thick as a finger and four miles long, the entire circumference of the city walls. In the

sixteenth-century plagues in Italy numerous new churches and votive chapels were built; so, for example, during the plague of 1585, in Ivrea, a decree was issued to rebuild the church of San Rocco. 'Private' offerings could also be considerable. In 1576, the Venetian patrician Antonio Bragadin offered 500 ducats to build the church of the Redeemer, and another 500 as alms for the poor. Again, in 1720, the authorities in Marseilles solemnly vowed to make a perpetual allowance to the church of Notre-Dame-de-Bon-Secours of 2000 livres annually to provide a dowry for the poor girls of the city and the surrounding area, in the belief that the ancient traditions were the best way of imploring divine assistance against the contagion (the cases of Barcelona, Venice and Marseilles are cited in Pullan, 1992: 105–6).

44. See p. 104 for the quotation from Pietro Parisi (1593: 57).
45. During the plague of 1570, at Amiens, 4000 textile workers were laid off for the length of the epidemic; the same occurred in 1635, this time provoking a riot; but in 1668, the workers who were laid off because of the contagion in progress were actually 8000 (Lucenet, 1985: 140–1).
46. For example, during the plague of 1575–76, Giovanni Filippo Ingrassia, a doctor from Palermo, wrote: 'Bread made from wheat that has gone bad is eaten, what is more it has rotted because of these warehouses [...] so that the bread has a dreadful smell' (Ingrassia, *Informazione del pestifero et contagioso morbo* ('Information about the pestiferous and contagious disease'), 1575, cit. in Aymard, 1973a: 24). The Venetian doctor Donzellini, writing in 1577, also believed that the root cause of plague was a kind of internal putrescence due to eating food that had gone off, and especially bread made with various kinds of flour and badly cooked (Donzellini, *Discorso nobilissimo* ('Noblest discourse'), 1577, cit. in Preto, 1978: 120).
47. It has even been suggested that a certain type of food deficiency, and especially an iron-deficient diet, could be a factor providing protection against *Yersinia pestis* (Cohn, 2002: 205).
48. Actually, the plague tracts in the first part of the sixteenth century only rarely associated poverty and hunger with plague. The turning point came with the Plague of San Carlo, after which medical tracts systematically tended to indicate malnutrition and wretched living conditions as factors able to facilitate contagion (Cohn, 2010a: 211–12). In 1577, Giovanni Andrea Bellicochi from Verona suggested to the authorities that good food should be given to the poor infected by the plague, as an effective 'antidote' against the disease, at least if given in time (Bellicochi, *Avvertimenti*, 1577, cit. in Cohn, 2010a: 212). The previous year, Gratiolo di Salò had observed that the humble living in filthy conditions were more likely to contract the disease than the cleaner nobility (Gratiolo di Salò, 1576: 18).
49. The shameful poor were citizens reduced to poverty by personal misfortune or by circumstance. Usually they had a home but were 'ashamed' to show that their socioeconomic situation had deteriorated. Regarding the classification of different typologies of the poor in Turin, see Picco (1983: 97 ff.), while for a more general discussion on the state of poverty, beggary and the lack of resources and rights, refer to Chapter 1 here.
50. The Plague of San Carlo is an exception. Venice had a hard time filling in the gaps caused by the epidemic in its specialized workforce, also on account of the strong opposition of its guilds to attempts to attract outsiders with the required skills through measures to liberalize the job market (Preto, 1978: 117–18).

51. The risk that the decline in the demand for luxury goods implied for urban economies can be easily recognized taking into consideration the damage caused by its *temporary* reduction, also during the plagues of the sixteenth century. Thus the flight of the better-off classes from Venice and from many of the towns on the Veneto mainland to the countryside in 1576–77 brought about a reduction in consumption and consequently in income from duties and excises, to such an extent that there was a real risk of compromising the state budget and triggering off a steep rise in public debt and a harsh increase in taxation (Preto, 1978: 133–4).
52. In some cases, the desire to attract qualified immigrants was accompanied by an attempt to discourage those who were unqualified or at least those with skills that differed from those hoped for, in a situation in which the availability of physical spaces (houses and workshops) within the towns supplied per se good opportunities for those who wished to move (see the case of Ivrea examined in Chapter 4). An emblematic example of a similar ‘closure’ is Mantua where, after the Plague of San Carlo, the move of the rich landowners to the city from the *contado* was encouraged (also for reasons of prestige) and also that of the highly specialized silk workers, to the detriment both of the poor country folk, as well as craftsmen and workers who had less ‘noble’ specializations than the silk workers (Corritore, 1987: 17–19).
53. It is well known that the diseases carried by Europeans to the New World caused terrible damage to the indigenous populations, with a number of victims that is difficult to estimate but is thought to be in the tens of millions. See Livi Bacci (2008); while on the subject of the ‘Columbian exchange’, see Crosby’s (1973) classic work.
54. Marcello Cumano, for example, wrote: ‘I can bear witness that in the year 1495, while I was in the camp of Navarra [Novara] with the troops of the Venetian and Milanese lords, I saw that many cavalymen and foot soldiers were affected by a celestial influenza that became an outburst of humours, with many pustules on their faces and over all their bodies, which generally began outside or inside the foreskin or above the glans causing the patient to itch. Sometimes it began with one pustule like a little blister, not painful, but itchy. They scratched, so that an ulcer formed as if there was a woodworm, and after a few days they suffered pain in their arms, legs, feet, with widespread pustules’ (Cumano, cit. in Cosmacini, 2006: 52–3, our translation).

4 Winners and Losers

1. The states belonging to the House of Este are often referred to as the ‘Duchy of Ferrara’ for the period until 1598 and as the ‘Duchy of Modena’ thereafter (in 1598, the capital was moved from Ferrara to Modena; see below for the events known as the ‘devolution of Ferrara’).
2. Regarding the status and the nature of these small political entities, see Giorgio Chittolini’s (1979) fundamental contribution. For the complexities of the ‘dynastic system’ linking together the Italian states of the Early Modern Age, see Spagnoletti (2003) and Rizzo (2005).
3. For the Gonzagas, the income from the *condotte* began to decline only in the 1530s, but was soon compensated for this by new investitures (Corritore, 1987: 23), in particular, the Marquisate of Montferrat obtained in 1536 on the death without

- heirs of Bonifacio Paleologo; see Mozzarelli (1979: 407–9), Spagnoletti (2003: 22–3) and Parrott (1997: 30–1).
4. It is a procedure that is only possible to carry out using sources of movement like parish registers and is impossible to do starting from the collection of state data, usually from censuses or lists or official reports, like those collected by Karl Julius Beloch (1994). The next chapter will give far more elaborate reconstructions of the movement of births on a regional scale, which, if correctly read, are a reasonably reliable indicator of the movement of the overall population. The present shortage of data, however, suggests refraining from analogous reconstructions on the scale of the single states and statelets of northern Italy.
 5. See the next chapter, as well as Alfani (2007b).
 6. Another factor that could affect the data is the Plague of San Carlo of 1575–77. However, its effects on the communities taken into consideration in this comparison (almost all spared the contagion) were very limited.
 7. As well as the Estense Duchy, France and the Papacy also joined the league.
 8. Following a dispute over the succession to the seignory, Gian Francesco and Ludovico Pico turned, respectively, to the emperor and to the King of France for support for their claims. A conflict followed that lasted with intervals and alternating vicissitudes for 30 years, until it ended on 15 October 1533, in a bloodbath in which Gian Francesco lost his life, assassinated with his son by his nephew Galeotto (Rombaldi, 1984).
 9. In fact, the alliance with Spain marked the fate of Finale, which since it guaranteed the State of Milan access to the sea, also in the event of hostility on the part of Genoa, was of considerable strategic importance. In 1571, on the pretext of forestalling a possible cession of the Marquisate to France, the Spanish army occupied Finale (Rizzo, 2005, 2008), provoking, however, the protests of the emperor, who was its feudal sovereign. It was only in 1617 that Philip III of Spain obtained the formal investiture of the Marquisate (Spagnoletti, 2003: 48–9).
 10. What is compared are five-yearly averages, the highest and the lowest excluded, for the years 1558–62 and 1585–89.
 11. These are questions that can also be read in the light of the analytical category of ‘strategy’, which has only recently emerged in economic historiography (Rizzo, 2005, 2007a).
 12. See Parker (1988, 1995), as well as the indications in the first chapter.
 13. Since the time of Philip II, the *Rey prudente* (the ‘Cautious King’), the Spanish monarchy’s Italian policy was mainly inspired by the principle of *paz y quietud* (peace and quiet). Philip and his successors were fully aware of the logistic and strategic difficulties involved in a composite state and did everything possible to protect it from upheavals. As Francesco Priuli, the Venetian ambassador to Madrid, observed in 1608, the Spanish ‘let it be clearly understood that calm in Italy is to their benefit, in order not to put that which they now enjoy at risk with uprising, as there is no lack of claims on their states by other princes’ (Priuli, *Relazione di Spagna*, cit. in Vigo, 1994: 33, our translation). On this subject, also see Chapter 1.
 14. The war was also quite costly due to considerable wastefulness and amounted to 4.75 million ducats (Mallett and Hale, 1984: 484).
 15. For example, the decree of the ‘new feuds’ of 30 August 1618, with which the duke, Carlo Emanuele I, hoped to find resources at the end of the costly War of the Montferrat Succession (1613–17), which essentially consisted in giving to the best bidder the feoffment of about a hundred Piedmontese communities, until

then directly dependent on the Crown or part of the 'district' or '*mandamento*' of a city (Rosso, 1994). This operation caused innumerable arguments and resulted in financial problems for the communities, which had large parts of their territory reduced, a fact up to now almost completely ignored by historians, except for a very few case studies (such as Alfani, 2009c, 2010d). For an analysis of the conflicts caused by an attempt to separate a city from its *contado* by means of new feoffments, see also the case of L'Aquila where, following the city's anti-Spanish uprising in 1528 during Lautrec's campaign (see Chapter 1), it was decided to subdivide the *contado* into forty-odd feuds to assign to Spanish captains, both as a reward for their services and as a guarantee of control over the territory (Sabatini, 2000).

16. The tensions, especially those related to exemptions, would further increase in the seventeenth century.
17. Regarding the *Egualanza*, see also Vigo (1979) and Rizzo (2000c, 2001).
18. On the traditional 'anti-Spanish' historiography, see Signorotto (2000) and Musi (2003).
19. For an exact quantification of these *soccorsi*, see Rizzo (1995: 355–7).
20. *In primis* the Republic of Genoa 'fully integrated within the Spanish Empire' (Giacomone Piana and Dellepiane, 2004: 42).
21. The Genoese bankers were not the only ones to take advantage of the Spanish Crown's thirst for liquid assets, nor to exploit the prominent role acquired by Italy in the strategic and logistic context of the Spanish Empire. Certainly at a far lower level we find, for example, Neapolitan merchants and bankers active in the business of transferring the *soccorsi* intended for Milan (Rizzo, 2007a: 496–507). Far more important was the role of Milanese bankers like Emilio Omodei, 'at the turn of the new century [the seventeenth] the richest Italian banker and the Spanish Crown's most invaluable money lender' (De Luca, 1996: 206). In the years of the Italian Wars, the loan of money to the great European monarchs had also tempted many princes and seigneurs to take the opportunity to make a profit; for example, Francis I of France had repeatedly to resort to loans offered by the dukes of Ferrara (Hamon, 1998: 29–30).
22. In the Roman Catholic Church, an ecclesiastical metropolis is the administrative centre of an ecclesiastical province. The latter includes many dioceses and has as its head an archbishop, also called in this function a 'metropolitan'.
23. The series are taken from Cattini (1983) for Carpi; Lenzi (1986–87) for Sabbioneta; Romani (1970, 1975) for Parma; and Beloch (1908) for Modena. This last series has been integrated with unpublished data given to me by Marco Cattini, whom I thank. I collected the data for Turin (Parish Archive of Sant'Agostino, Register of Baptisms 1551–1617); the pertinent series is published in Alfani (2004a).
24. Between 1522 and 1527, Carpi changed hands on four occasions and there is evidence that the population was subjected to much violence and abuse. In 1528–29, the city suffered from a serious plague, following two years of famine (Cattini, 2002).
25. When during the Hundred Years War, the French court was established in Tours in 1450, its population, which numbered no more than 9000 to 10,000, immediately increased by about 2000 (+20 to 23 per cent). In the first phase of the court's residence, we know that about fifty silk weavers moved to the city each year: the demand for luxury goods strengthened whole sectors of production or generated

them from scratch. Besides, the presence of the royal court certainly offered the inhabitants of Tours a chance for social advancement. While under Charles VII only 3.4 per cent of his councillors came from the city, under Charles VIII the proportion reached 21 per cent. When the court moved to Paris in 1515, the families who had been able to find a niche in the political-administrative structures of the kingdom followed the sovereign, becoming Parisians (Chevalier, 1975). The manufacture of silk is certainly one of the sectors most sensitive to the location of the court and to the demographic-dynastic dynamics of the noble families. In Mantua, for example, the event of four weddings in the Gonzaga family between 1579 and 1584 brought a noticeable increase in production: the 229 looms in the city in 1579 increased to 537 in 1585. Once the boom of domestic demand was over, local manufacturing returned to more balanced levels (389 looms in 1590), but it is anyway clear that in the long term the presence of a court was a factor that provided both reassurance and protection for the manufacturing sector (De Maddalena, 1962; Belfanti, 1988).

26. The case of Ferrara is analysed elsewhere (Alfani, 2009d); see later for the speculative case of Modena. Also Urbino, which in 1523 lost its status of capital of the homonymous duchy to Pesaro, underwent a rapid demographic and economic decline.
27. The case of Piacenza is examined elsewhere (Alfani, 2009d). As for the dynamics of the city in the sixteenth century and the role that it played in the Farneses' 'dual-headed duchy', see also Romani (1978a) and Mocarelli (2008).
28. In 1377, there were 3500 inhabitants; in 1571, there were 14,244; and in 1612, there were 24,410 (Beloch, 1994: 578).
29. For a more exact quantification, see Alfani (2009d). Here I will merely recall the example of Ferrara, where, in the second half of the sixteenth century, Alfonso II had 1656 courtiers out of an estimated population of 41,710 in 1571 (Beloch, 1994: 633). Cesare, the duke forced to transfer his capital to Modena in 1598, could count on a more 'modest' court of almost a thousand people (Alfani and Guerzoni, 2004).
30. As well as affecting permanent or long-term migrations, the territorial reorganization certainly modified the direction of seasonal or short-term migratory flows. On the one hand, the loss of attraction of a downgraded city, already subject to a decline in its resident population, must have affected the volume of these flows. On the other hand, losing the court and other institutions and functions must have modified the professional composition of the seasonal flows in a way similar to that which affected the long-term flows.
31. Some kinds of cultivations, and especially that of fruit trees, required many years and much work to be re-established; farms and whole villages, destroyed during the war, had to be rebuilt and so on.
32. Remember, however, what has been said about the rapid growth of new capitals like Turin or Parma, or about the redistribution of the demographic load in the rural areas of Mantua. See Chapter 2 and Corritore (1996).
33. As mentioned in the third chapter, some components of the heterogeneous social category of the 'poor' had the right to assistance and were in some way protected by the institutions during the crises.
34. Romani (1983), Cattini (1984), Bolognesi (1984) and Corritore (1996). In general, on the subject of the crisis of peasant property in Early Modern Europe, see the syntheses of Jacquart (1980) and Bennisar (1981), while for the processes leading to

the concentration of property in the long term, see the essays collected by Alfani and Barbot (2009).

35. Take the case of Francesco Crotti, treasurer for the dukes of Savoy, who already around 1620 was the eighth richest property owner in Ivrea, with a patrimony registered in the *estimo* of 918 denari. After a decade when he had not been able to make new acquisitions, but had instead ceded some of his possessions, in 1631 he took the opportunity to start considerably increasing his property (+9 per cent). He was able to expand this further the following year to a far greater degree (+51.5 per cent), buying property for 490 denari. Francesco, with a patrimony that amounted to 1441 denari, found himself the second richest real estate owner of the city (Alfani, 2010c).
36. This situation helped to exacerbate the city's financial difficulties, a consequence of the clergy's attempts to evade taxation. It was probably amplified by the climate of the so-called Counter-Reformation, which for some decades had been encouraging almost everywhere in Italy a new phase of expansion of the patrimony of the Church (Chittolini, 1973; Stumpo, 1996).
37. It is well known that the military profession provided the population of many areas of Europe, often mountainous, marginal or, anyway with limited agricultural potential, with a specialization able to guarantee an additional source of income to large sectors of the population. In Europe, the best known example was certainly that of the Swiss mercenaries who, as will be remembered, played a key role during the Italian Wars. As Hale notes (1985: 106), the Swiss were encouraged to serve abroad by the 'labour-unintensive' pastoral agriculture of the Confederation, while, according to Cipolla, 'Switzerland was [...] so poor that to survive it had to sell its citizens as cannon fodder (mercenaries)' (Cipolla, 1994: 84, our translation). Also within the Italian Peninsula, however, the 'countries of mercenaries' abounded: like, for example, in the mountains around Urbino, where the Montefeltros usually recruited troops (De La Sizeranne, 1972: 44; Paci, 2005: 45) and in general the 'harsh lands' of the Marches, Romagna and Abruzzo (Hale, 1985: 106–7), like Corinaldo (Paci, 2005: 80–95). Also Corsica, then part of the Republic of Genoa, that was home to 'the most militarized population in Italy, and its soldiers had long been the pillars of the Genoese state' (Hanlon, 1998: 318). On these issues, see also Barbero (2002) and Del Negro (2001), as well as Chapter 1 on soldiers' recruitment and pay.
38. That is, without denying that the highest honours went to the most influential figures and those with most possessions and the widest circle of relationships (Spagnoletti, 2003; Rizzo, 2005), like the often cited Vespasiano Gonzaga, or the Duke of Parma, Alessandro Farnese, who, continuing the policy of service to Spain inaugurated by his father Ottavio (which had already gained for the family the restitution of Piacenza), guaranteed the survival and well-being of his duchy. In recent years, economic-social historians have paid growing attention to this and similar complex questions. They explored in greater detail themes that here it has been possible only to touch on: not only the issue of recruitment for merit or rank (one complicated by the phenomenon of buying office), but also the adaptability of officers and top officials to a wide variety of functions, or the transfer of posts between different members of the same family, certainly to be read as a form of patronage, but sometimes corresponding to strategies aimed at putting to good use a heritage of skills and relationships, maintained and developed within the family or kinship group; see Mantelli (1986), Hanlon (1998), Rizzo (2005) and Maffi (2007).

39. In the field of military engineering, sixteenth-century Italy was indisputably leader, and Italian engineers were employed throughout the continent, as illustrated by Renzo Paci's excellent synthesis (2005: 13–39).

5 Population and the Economy: Underlying Trends

1. This does not mean that the sixteenth-century crises did not have demographic consequences, sometimes of considerable importance, on a local level (as in the case of the collapse of the former capital cities examined in the fourth chapter), nor that they cannot be interpreted as specific factors of change: in institutions (see the case of the food-provisioning authorities in the second chapter), property structures (second and third chapters), and crop regimes (examined later in this chapter).
2. To build these aggregate series, like those that follow, I have first substituted the 'real' values of each local series with indexes with a common reference, the average of the years 1610–14, so that greater weight was not *de facto* attributed to the numerically more substantial series compared with the others, with the aim of maximizing the territorial representativeness of the database. On the basis of indexed data, I then calculated the simple average (giving a weight of 1 to each series) of groups of series identified from time to time according to criteria suited to evidencing the dynamics that I intended to explore (for example, between different environments; between cities and rural areas; between different areas and regions; and so on). For further information regarding the components of the aggregate series presented in the Figures 5.1 to 5.5, see Alfani (2004b).
3. It should be added that, at least in the 1590s, the vicinity of ports did not always guarantee the coastal areas in general (see also Figure 2.2) an easier access to grain imported from abroad. In the case of Genoa, the city suffered hunger in 1590 and 1591. It was only in 1592, thanks to an efficient public policy of provisioning grain from northern Europe, that it was possible not only to satisfy local needs, but also to export food very profitably to other areas of Italy (Grendi, 1971; Costantini, 1978).
4. Chestnuts can be used in bread-making and can be conserved easily in the form of flour (Pitte, 1986: 245–50; Cattini, 2008a: 549), so that according to Pitte (1986: 247, our translation), in the Apennines from Piedmont to Tuscany during the Early Modern Age 'chestnuts were preponderant in the diet of the majority of the inhabitants, of whom it is necessary to remember the high density'. On the spread of chestnut groves during the Early Modern era, see Chapter 2.
5. '[...] the high territorial mobility [of the mountain dwellers] within different infra-regional areas, together with the possibility of gaining additional income also from sectors other than agriculture, seems to protect them from the harsh demographic consequences of repeated crop failures' (Cattini, 1988b: 75, our translation).
6. In Sicily, but not only there, these processes put an end to the demographic imbalances that had occurred from the time of the great plagues of the fourteenth and fifteenth centuries, when the mountains appeared to be 'refuge zones' (Aymard, 1975: 210–11). Even from this long-term view, then, it is necessary to recognize that the terrible famine at the end of the sixteenth century functioned as a powerful factor for settling demographic imbalances, which I have noted on several occasions, and from different points of view, in Chapters 2 and 4.
7. According to these authors, the urbanization rate of the Peninsula would have approximately equalled 22.1 per cent in 1500, and would have slightly increased to 22.6 per cent before 1600 (Bairoch et al., 1988: 259).

8. The quota of urban population would decrease to 15.2 per cent by 1650, and the rate of urbanization would not return to the levels of the early sixteenth century until the twentieth century.
9. According to Bairoch et al. (1988: 45), Naples had a population of 125,000 in 1500 and actually reached 275,000 in 1600.
10. This is true of many Italian 'micro-capitals', which for merits acquired by their seigneurs during the sixteenth century were 'established' as cities by an imperial decree: for example, Correggio in 1557, Sabbioneta in 1577 and Mirandola in 1597 (Spagnoletti, 2003: 48).
11. Municipal Historical Archive of Ivrea, *Categoria 14 (Censimento)*, no. 1750.
12. As suggested by the overall reconstruction advanced at the end of this chapter, the peace ended a long period of demographic stagnation, triggering a period of rapid growth.
13. For the cities with more than 20,000 inhabitants, like those in the bands of 4000–7000 and 7001–12,000, I compared the average level of the years 1560–64 with that of the years 1606–10. For the cities in the band 12,001–20,000, I compared the average of 1570–74 with that of 1606–10.
14. The series taken to represent the movement of births in rural areas is the same as the one used for the 'plain' in Figure 5.1.
15. This is mainly due to the substitution of the 'real' values of each series within the aggregates with indexes based on 1610–14. Besides, as we do not have complete data for each and every community, those included in the aggregate series are only partly the same (the selection has been made in such a way as to guarantee territorial representativeness; see Alfani, 2004b).
16. For all of these issues, see Chapters 2 and 4, merely recalling that the famine of the 1590s solved some important imbalances between demographic load and economic opportunities at a local level, for example those caused by institutional downgrading, as in the cities that lost their courts and the status of capital.
17. Actually, for the sixteenth century, this kind of study is still quite rare, but it is worth remembering at least the classic research carried out by Athos Bellettini on the city of Bologna and its *contado* (Bellettini, 1961; Bellettini and Tassinari, 1977). The case of Bologna and its *contado* has also been analysed in Alfani (2004b), together with that of Ivrea. For a partial mapping of the migratory flows of the Early Modern era on the regional and subregional scale of northern Italy, see Corritore (1993: 373–4).
18. Without any claim to covering all the material, for a synthesis of the models and the crop regimes in Italy during the Early Modern era, see Aldo De Maddalena's classic essay (1964), as well as Bolognesi (1984, 2003), the collection of essays in Pinto et al. (2002) and, from the perspective of the history of the landscape, Sereni (1961). For a synthesis of the research that followed De Maddalena's fundamental contribution, see Cattini and Romani (1987); and especially, on the history of large estates (a field of scholarship that provided much data, although only for small areas), see Poni (1978) and Coppola (1983).
19. For a classification of the agrarian contracts in use in the sixteenth century, see Giorgetti (1974).
20. While in 1550 the cultivation of rice covered about 3 per cent of the land in the state of Milan, before 1700 it would increase to approximately 10 per cent of the territory (De Maddalena, 1964: 381). On the extension of rice crops in northern Italy in the Early Modern Age, see Faccini (1976a), Chittolini (1988), Ciriaco (1994) and Di Tullio (2009a, 2011).

21. A diet that is too dependent on maize in time causes pellagra, a serious form of avitaminosis due to a lack of vitamin B. In Italy, as elsewhere in Europe, from the seventeenth century on pellagra would become a widespread disease in maize-producing areas (Finzi, 2009).
22. Although certainly known and often mentioned in texts of agronomy (see Saltini, 1984: 304–5), in the sixteenth century the rotation of meadows and ploughed land, a system for renewing soils and increasing yields, was not systematically widespread in the irrigated areas of Lombardy. The impression is that until the middle of the century, it was completely absent and that the meadows were areas kept quite distinct from ploughed fields (Chittolini, 1984: 564). Later on the situation began to change, but it was a gradual process and it was a long time before rotation became standard practice: ‘[In the sixteenth century] for ploughed land [...] the use and the usefulness of putting fields to grass after the wheat harvest was commonly recognized [...]; as for the meadows, equally well known and employed was the practice of “interrupting”, i.e. after a certain number of years, sowing millet, linen and also rice. What we do not know is how far these rotations were practised and how regularly in different zones and on different types of farms, or even, how far and in which circumstances in the diverse areas of the region, their practice proved beneficial. The cycle of forage crops on land normally ploughed, even though irrigated, does not appear to be recorded in many zones [...]. In the same way meadows, where the presence of water enabled them to be kept permanently, often seem too precious, the fruit of too much attention, trouble and expense over a long period, to make it worthwhile “interrupting” them, if not at long intervals, or in exceptional cases (*pro seminario milii* – sowing millet, for example, in times of famine). Meadows on the one hand, and irrigated ploughed land on the other, are [...] still considered distinct and separate crops’ (Chittolini, 1988: 215–16, our translation). Di Tullio (2011) also came to similar conclusions.
23. *Chiusure* and *piantate* are surrounded by hedges, fences and ditches to prevent access to animals grazing in the open fields. The transition to the *piantata* corresponds to the gradual reduction in the area given over to pasture and progressively used for crops, with the result that farm animals were no longer left to roam freely (Cattini, 1984: 28–37).
24. In the Milanese there were also paddy fields (covering 7 per cent of the territory), whereas they were practically non-existent in the Lodigiano (Coppola, 1973; Chittolini, 1988; Di Tullio, 2009a, 2011).
25. With regard to the low yields in the high plains of Piedmont, among the worst in northern Italy, see Levi (1991: 147–51).
26. For further information on each of these areas, see Alfani (2007b), where the cases of the rural areas of Bologna and Pavia are also examined, and where the raw data used here to draw the Figure 5.5 are published.
27. For rice as a commercial crop mainly grown for export, see Sella (1961), Lanaro (1998) and Ferrarese (2007–08). Note that from our point of view, rice had the added advantage of making it possible to reclaim (totally or partially) marginal areas like marshes and swamps, with great works of land reclamation (for Veneto, see Ventura, 1968; Ciriaco, 1994) but also with circumscribed operations, managed locally, with the purpose of reclaiming the marginal lands of specific communities (Ferrarese, 2007–08).
28. Cattle-breeding was mainly in the hands of the *bergamini*, owners of herds or simply cattle-breeders who took their animals to winter on the farms, buying forage

- and so on from them (Bellabarba, 1986; Chittolini, 1988: 219–20). At other times of the year, the herds were not kept on the farms.
29. The second main factor was then absent, which would have allowed both the extension of irrigated meadows and a substantial increase in crops, the first factor being the rotation between meadows and irrigated crops, at this time not yet systematically practised (see n. 22 in this chapter). Therefore, ‘it does not seem that the situation as described by de Vries for Holland in the seventeenth century is true for Lombardy. In Holland the smallholders preferred to produce butter rather than rye, because with the butter that they could sell they were able to buy greater quantities of rye than they could manage to produce directly; and vice versa some serious bottlenecks are attested from which the rich agriculture of the irrigated lands did not seem able to free itself’ (Chittolini, 1988: 271, our translation). In this case, too, sixteenth-century agronomic treatises and primarily for Lombardy, Agostino Gallo’s *Vinti giornate dell’agricoltura et de’ piaceri della villa* (published in its final version in 1572; see Saltini, 1984, 2002) are only to a certain extent an example of the actual spread of specific agricultural techniques. On the complexity and gradualness of the processes of innovation in the rural areas of Lombardy, see also Coppola (1996).
 30. The Muzza, an impressive example of canal-building constructed between the twelfth and thirteenth centuries, played a key role in influencing the agricultural development of the Lodigiano (see Roveda, 1984; and Di Tullio, 2009b). Note that the principal canal was not completed at the same time as its subsidiaries, mostly finished at a later date (as implied in the quoted passage).
 31. As well as the permanent irrigated meadows, also the extension of industrial crops like linen.
 32. In recent decades, many different ‘Malthusian’ (or neo-Malthusian) models have been developed, all sharing the assumption that an uncontrolled demographic growth, or anyway a too rapid one, can lead to situations of ‘overpopulation’ resulting in a dearth not only of food, but also of resources in general. Moreover, during the twentieth century, apprehension about environmental deterioration caused by an ‘unsustainable’ population has added to these concerns. After the 1960s and 1970s, when many feared the explosion of the ‘demographic bomb’ (Ehrlich, 1968; Meadows, 1972), more moderate approaches have prevailed. On this subject, see Coleman and Schofield (1986), Livi Bacci (1991, 2006), Bengtsson and Saito (2000) and Bengtsson et al. (2004). Among the models inspired by Malthus we can also number the relatively recent attempts to include the population variable in an endogenous theory of growth inspired by neoclassical economics. See, for example, Kremer (1993), Galor and Weil (2000), and for Italy Malanima and Capasso (2007).
 33. According to Lee, in the long term, the positive Malthusian checks intervene to bring the population back within a ‘Boserupian space’, where the virtuous interaction between population and technology (agrarian) is possible. From this perspective, the periodical occurrence of crises of the Malthusian kind is recognized (as a great deal of historical literature suggests), accepting, however, the possibility of an increase in the long term in the production of foodstuffs and, therefore, also in the population, determined endogenously by the demographic system.
 34. ‘Within an agricultural world whose target is a polyculture of mere subsistence, the mainly predominant mindset (cultural conformism is a typical feature of all backward cultures) favours the production of crops that would ensure a steady

- annual income (in real terms), able to guarantee complete economic independence (one consumes what one produces), both of landowners and sharecroppers. In such an environment, clearly the concern to maximize revenues (in currency) and to minimize costs does not arise. On the other hand, why attempt agronomic innovations when you are well aware that any alteration in the balance of the crops could have tragic consequences on the quantity of the harvest? The aim is to maintain a balanced relationship between the numerous components of the basket of consumer and investment goods necessary to the landowners and farmers at the end of each year. In this light, it is certainly possible to speak of an "economic" management of sharecropping' (Cattini, 1978a: 871, our translation).
35. In 1600, northern Italy alone, with about 6.5 million inhabitants, had a population that was almost 50 per cent more than that of England and Wales together, and just a little less than the 6.8 million inhabitants of Spain. At that time, central Italy had 2.2 million inhabitants and the south 3.3 million. For the data on Italy, see Sonnino (1996); for Europe, Malanima (2009b). Also see Table 5.1.
 36. For information on the structure of the database per region and per year of outset of the series, see Alfani (2007b).
 37. On closer inspection, Galloway's reconstruction is open to criticism also on other accounts: see Alfani (2003, 2004b, 2007b).
 38. The urbanization rate for small cities is also deduced from de Vries. He provides the total for the population of the cities with 5000–9999 inhabitants and those with more than 10,000 inhabitants for 'Mediterranean Europe'; the proportion between the two can be used to obtain from the percentage of the 'urban' population (>10,000 inhabitants), available also for small geographical areas (including specifically northern Italy), the percentage of the population living in small cities (<10,000). This approximation is more than sufficient for my purposes.
 39. One last clarification concerns the statistical method used to reconstruct aggregate series based on sometimes incomplete local series and that, looking from more recent to earlier periods, are a set that gradually tapers off, corresponding to the date on which the baptisms in each locality were first recorded. To solve this problem, I have chosen to use some tools developed for analogous purposes by a project coordinated by Institut National Etudes Démographiques (INED), whose aim was to reconstruct the movement of births and deaths for the whole of France from the sixteenth century to 1670 (Biraben et al., 1980; Biraben and Blanchet, 1982; Biraben and Bonneuil, 1985). The resulting series have been used in the *Histoire de la Population Française* (Dupâquier, 1988). The year 1670 is that of the beginning of the famous enquiry coordinated by Louis Henry (for the results, see Blayo, 1975; Blayo and Henry, 1975). Where there were partial gaps of a short period (at the most six consecutive years) and where data was only partly complete, I used the method proposed by Francesco Scalone (2001), adopted also in other studies (Del Panta et al., 2002; Del Panta and Scalone, 2002). Regarding this, and on the concept of 'partial completeness', see also Alfani (2004b).
 40. The series relative to the region of Emilia-Romagna is analysed in Alfani (2011c).
 41. The Piedmontese series includes the Aosta Valley and the Veneto series includes Trentino-Alto Adige and Friuli-Venezia Giulia, consistently with the principal estimates of the size of the population per region available (Cipolla, 1965; Levi, 1991).
 42. Unlike the aggregate series given previously (Figures 5.1 to 5.5), the basic series (that is each individual local series) used for the reconstruction of the births of the whole of northern Italy and its components (Figures 5.6 to 5.8) have *not*

been indexed, but have been included with their real values, consistently with the statistical methods described above. The indexing in base 1601–28 was made on the intermediate series of the large and small cities and of rural areas, region by region.

43. If we take as accurate the estimates of the sizes of the population of northern Italy given by Beloch for the year 1600 (5,412,000 inhabitants), and taking into account the fact that between 1599 and 1601, in the 164 parishes in my sample, on average about 22,300 baptisms were celebrated, it emerges that the quota of the total births is between 11.8 per cent (conjecturing a birth rate of 35 per 1000) and 9.2 per cent (corresponding to a birth rate of 45 per 1000). Note that Cipolla does not give estimates of the population of northern Italy to 1600.
44. The aggregate series that describes the movement of deaths consists, therefore, in the 'simple' weighted average of series relative to rural areas, to big cities and to small ones, series that in turn directly estimate the overall deaths of northern Italy in different settlement contexts.
45. A 'cohort effect' could be determined by large generations reaching reproductive age, which, only for this reason, would tend altogether to generate a large number of children even assuming a steady fertility rate (in demography 'generation' is the term applied to the set of those born in the same year, while 'cohort', in general, means a group of individuals who experience the same demographic event. A generation, then, is the cohort of individuals born in the same year).
46. In the 1560s, the high level of the aggregate series of deaths could be the unwarranted consequence of the limited number of series of burials available for such an early period. As far as the first part of the reconstruction of deaths is concerned, I think that the most reliable information is that concerning the tendency towards a decline in mortality (which fits in perfectly with the contemporaneous increase in fertility), and not the level reached by the series in comparison with later periods.
47. As affirmed by, for example, Bellettini (1973) and Belfanti (1984), but see Chapter 2 for a more comprehensive discussion.
48. Recently, Lo Cascio and Malanima (2005) have affirmed that the population level reached in the second half of the sixteenth century corresponds with the maximum demographic carrying capacity of Italy, already reached during the Roman Empire, lost during the early Middle Ages and once again reached around 1300 and then lost again with the plague of 1347–48. It was also the plague (the pandemics of 1629–31 and 1656–57) that during the seventeenth century nullified the sixteenth-century growth.
49. In 1550, it was in the central areas of the Peninsula, among those most seriously hit by the fourteenth-century plague, where delay was most noticeable: –33 per cent in comparison with the years before 1348 (Pinto, 1996: 61). Unlike northern Italy, however, this situation was not the condition for a more rapid growth once the Italian Wars were over. Eugenio Sonnino puts the overall growth of the population of central Italy between 1550 and 1600 to just a third, in proportion, of that of the north, and 30 per cent less than that of the south and the islands (Sonnino, 1996: 79).
50. Beloch's evaluation was partially in disagreement. He estimated for the period 1550–1600, a growth of 9 per cent in the south, of 15 per cent in the centre, of 30 per cent in the islands and of 'just' 13 per cent in the north (Beloch, 1994: 632).
51. Elsewhere (Alfani, 2004a, 2007b) I have argued that the growth rate of the population indicated by my reconstructions (in particular that of the births) seems more

- compatible with Cipolla's estimates than with Beloch's. Their estimates for northern Italy between 1550 and 1560 involve, respectively, a population increase of about 35 to 40 per cent or of just 14 per cent, which correspond to growth rates of 6.7 or 2.6 per 1000 (see Table 5.1). According to Levi (1991), Cipolla's estimates (which are presented as a revision of Beloch's) betray a 'Malthusian' idea of the relationship between population and resources, while the figures provided by Beloch, corresponding to a slower rate of growth, would be compatible with a Boserupian perspective. This hypothesis is further discussed in Alfani (2007b).
52. Precisely 13,272,000 inhabitants according to Beloch (13,111,000, according to Levi, 1991, who seeks to standardize the reference areas), in comparison with Cipolla's 12 million.
 53. Like, for example, in Milan (Vigo, 1994; De Luca, 1996; Rizzo, 2000b) or in Venice (Lanaro, 2006). For a brief general synthesis, see Sella (1997) or D'Amico (2004). About the initial decades of the seventeenth century, Hanlon (2000) even suggests that: 'The period 1600–18 was the period of maximum mercantile and manufacturing activity in Italy, the culmination of an upward trend beginning in the fifteenth century' (Hanlon, 2000: 206–7); this, however, might be too optimistic.
 54. In the years 1590–1600, for example, and in spite of the change in the international scenario brought about by the opening of new transoceanic trade routes, for a time Venice reclaimed its role as the great clearinghouse of spices from Asia. Even in Genoa, which was ever more clearly opting for finance and no longer for trade, the sea trade around 1600 reached unprecedented levels even though it was increasingly dependent on foreign vessels (Lane, 1940; Grendi, 1968; Costantini, 1978; Sella, 1997).
 55. It is sufficient to mention the ongoing progresses made between the sixteenth and seventeenth centuries by silk production (Moioli, 1981; Poni, 1990; Cavaciocchi, 1993; Battistini, 1998, 2003; Molá et al., 2000; Mazzotti, 2006). Also see the following note on the role played by urban guilds.
 56. Like Florence, the cities on mainland Veneto, such as Verona, Vicenza and Padua, also suffered from competition from Venice, added to which there was that of Mantua (Demo, 2006). The decline of the Florentine textile industry has been studied by Malanima (1982). Recently, however, it has been claimed that the decline in production, in the 30 years around the turn of the sixteenth century was 'not traumatic' and 'it was the last decades of splendour that were the theatre of original experimentation' by Florentine wool *Arti* (guilds) (Ammannati, 2008, our translation). Another subject to be taken into account is the question of the Italian guilds' dynamism and their ability to innovate between the sixteenth and seventeenth centuries, highlighted by many studies contrasting a traditional historiography that saw in them the main cause of the decline of Italian economies (see Cipolla, 1968) and it is one that continues to provoke lively debates (Epstein, 2008; Ogilvie, 2008). See the collection of contributions in Guenzi et al. (1999) and Massa and Moioli (2004).

Conclusion: Towards the Seventeenth Century

1. 'Italy had a relatively limited internal market and poor natural endowments. Her economic prosperity was traditionally dependent on her capacity to export a higher percentage of the manufactures and services she produced. During the sixteenth century, other countries, particularly the northern Low Countries and

England, developed their production along new scales and with new methods, and their products did well in the international market. [...] Until the end of the sixteenth century demand boomed in the international markets and this sustained efficient, less efficient, and marginal producers. Behind a cheerful façade, however, Italy was sliding imperceptibly from a leading position to a marginal one' (Cipolla, 1993: 243–4).

2. See Borelli (1992), Guenzi et al. (1999), Massa and Moiola (2004), Epstein (1998, 2008) and D'Amico (2004), as well as the final section of Chapter 5.
3. In Chapter 1, I suggested that the concept of 'negative production', applied by Cipolla to the analysis of the consequences of war, was in part developed on the basis of his own experiences and that of historians of his generation during the Second World War. While I think that it is always necessary to be extremely cautious in linking a scholar's biography with his scientific views, in this case we cannot but point out that Cipolla's view of the consequences of the 'reconstruction' could have been influenced by his experience in the years of the Marshall Plan and Italy's 'economic miracle', certainly an example of how war damage *can* be a starting point for successful dynamics of growth and development.
4. Also remember from the Introduction the etymology of the word 'catastrophe'.
5. See Chapter 4 for a comprehensive discussion of these subjects and an overall interpretation, while in Chapters 1–3 specific redistributive aspects are examined, some recurrent but others specific to each type of catastrophe.
6. For a synthesis, see Sella (1997: 23–9), but also see Coppola (1983), Cattini (1996–97) and Pinto et al. (2002).
7. On several occasions, I have mentioned the difference in the trends of the overall and the per capita product that can be caused by a mortality crisis (for example, the seventeenth-century plague pandemics). Note that this difference plays a key role in Malanima's interpretation. See Chapter 5 but also Alfani (2010b, 2011b).
8. See the more analytic and detailed division into periods proposed in Chapter 5, which also gives an account of the impact of the famine of 1590–93.
9. To be precise, the epidemic of 1629–31 affected northern Italy, except for Liguria, plus Tuscany (the latter was affected relatively mildly), while that of 1656–57 affected central and southern Italy, plus Liguria, but not Tuscany. In the preceding years the plague struck Sardinia, while Sicily suffered a serious epidemic in 1624–25 (Del Panta, 1980; Alfani, 2010b).
10. However, we cannot deny either the rebalancing role of the epidemics, which reduced pressure on resources and actually re-established the space within which important agricultural innovations could be introduced (see Alfani, 2010a, 2010b), or the improvement in the standards of living of the survivors, expressed, for example, in terms of per capita income (Malanima, 2002; Malanima and Capasso, 2007). Unlike Malanima, however, I do not think that it is possible to claim that '[in the seventeenth century] once again the shock of the plague proved beneficial' (Malanima, 2002: 345, our translation). In my opinion, the negative effects of the epidemics that beset Italy during the seventeenth century clearly prevailed over the positive ones (see later), and unlike the sixteenth-century plagues, were a kind of 'system shock' with serious and lasting consequences. Moreover, I have already pointed out that I think that it is necessary to be very cautious when attributing to a plague or, in general, to a mortality crisis, the function of economic stimulus; much depends on the specific characteristics of the mortality (and thus on the damage wrought on human capital), its level, the local and supra-local context and so on. Furthermore, some studies advise prudence also when viewing

seventeenth-century pandemics as factors that were improving living standards (Andreozzi, 2010).

11. Each of these epidemics had much lower mortality rates than those found in many Italian cities in 1629–31 and 1656–57. However, I do not know of any Italian city that during the century was hit more than once by plague, a circumstance that poses, among other things, important questions on the nature of the illness (Alfani, 2011b).
12. So London, hit by plague in 1603, 1625, 1636 and 1665–66, increased its population threefold during the century, reaching 600,000 inhabitants by 1700 (Slack, 1985; Bairoch et al., 1988).
13. One of the main exceptions in the seventeenth century was certainly Savoy Piedmont, on the rise on the Italian and international scene (Stumpo, 1988; Barbero, 2008). Is it by chance that Western Piedmont was among the areas of northern Italy that were less affected by the great epidemic of the century (see figure 2.2 in Alfani, 2010b)?
14. Moreover, recent studies suggest that in many cases, the policies of containment were more effective than was once believed (Sonnino, 2006; Del Panta, 2007).

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